INTRODUCTION

The Department of Law, The Planning Department and The Engineering Department have collaborated to prepare this Land Subdivision Code. A copy of the Code may be purchased for the sum of $20.00.

All information contained on a page which is identified by a Roman Numeral is explanatory material or an aid, and was drafted by one or more members of the departments involved, and is not a part of the substantive law of the Code. Most information contained on pages identified by Arabic numerals, and which is also contained within brackets or parentheses, has been added by the codifier and is not a part of the substantive law of the Code. The text of the original ordinance may have to be examined unless the context reveals which parenthetical phrases were added and which were in the original. That portion of the Code on pages numbered with Arabic numerals, and not contained within brackets or parentheses is drawn from the text of the Land Subdivision Code and the text of the amending ordinances.

If there is any question concerning whether or not this document is current, the reader should examine the last sentence on page I (which indicates the date the codification was prepared). This information can then be verified through city offices to determine if this is the most recent publication of the Code.

The Code is organized along the lines of general principles, in the approximate order that a developer would need to proceed with the project. The staff anticipates that the landowners will need to be familiar with the general provisions of Article 1 and the procedure of Article 2 in order to determine the feasibility of any proposed subdivision. General designers working for the landowner will have to be familiar with the Subdivision Design Standards in Article 3, the Contents of a Preliminary Plat in Article 4, the Contents of Final Plat in Article 5, and Lot Splits and Exceptions in Article 6, in order to develop the general plan of development, and to know the procedural steps which must be taken to get approval of the overall design . Design engineers will have to be familiar with the Engineering Design Standards in Article 7, Plan Approvals in Article 8, and Engineering, supervision and Inspections in Article 9. Finance officers will have to be familiar with Acceptance of Public Improvements in Article 10 and Security Devices and Fees in Article 11. While these statements do summarize the general nature of the Code, it is important to note that the landowner is responsible for the entire project and may be exposed to liability and penalties under Article 12 for violation of any of the Articles of this Code. In other words, we anticipate the landowner will hire a number of professionals to deal with various portions of the Code; but ultimate responsibility remains with the landowner, and the landowner will be held responsible for a violation of any portion of the Code whether done individually or by any employees or contractors working under the owner's authority. We, therefore, encourage the owner of the project to review the entire Code, and we invite questions to be directed to the Planning Department. It is the City's policy to encourage growth and development of the community, while striking a reasonable balance between the interests of the private developer and the demands being made on public facilities and public services as a result of that development.

Respectfully,

Michael R. Vanderburg
City Attorney

ARTICLE 1. GENERAL PROVISIONS

1.1. TITLE AND CODIFICATION.

This ordinance and all amendments thereto shall be known and may be cited as the "Broken Arrow Subdivision Code", and shall be separately codified by the Department of Law. (See generally 11 O.S. 41-101 et seq. and 45-101 et seq.)

1.2. INTERPRETATION OF PURPOSE.

In their interpretation and application of the provisions of this code, all administrative boards and agencies, legislative bodies, and judicial bodies are advised that the Council has determined that the urban real estate market requires the ready availability of parcels of land of a wide variety of size and shape, which can be conveyed easily. The market further requires these parcels of land to have available a number of utilities, ready access to public facilities and public improvements, and to be generally suitable for immediate occupancy by buildings and structures of various kinds. In pursuit of these market objectives, the subdivider through various legal processes is actively involved in the building and rebuilding of cities generally and the City of Broken Arrow in particular, as every tract of land laid out thereafter becomes a permanent feature in the community. As such, the public at large is entitled to consideration in this process due to the fact that the public at large is ordinarily required to furnish a number of basic services and facilities without which the new urban addition would be of little value. Furthermore, the public must live with the off-site consequences of the subdivision process and is frequently called upon to maintain or expand improvements at taxpayer expense which were originally built by the subdivider and which deteriorate or prove to be inadequate after the typical subdivider has disposed of his total interest in the property. In fact, the public as a community is responsible for the economic and social climate and conditions making the subdivision of land desirable and profitable. The Council therefore concludes that it is necessary for land subdividers to be held to certain minimum requirements adopted for the protection of the public health, safety and welfare. Such protections are also intended to provide for a permanently wholesome community environment which has adequate municipal services and safe public facilities which meet the physical and aesthetic needs of the citizens.

1.3. SCOPE.

This subdivision code shall not apply to any lot or lots forming a part of a subdivision created and recorded prior to the effective date of this ordinance. Provided that if such land is replatted after the effective date of this ordinance, the replat will comply with this code to the extent that the level of development (as of the effective date of this ordinance) on such previously existing plats permits. Nor is it intended by this code to repeal, abrogate, annul, or in any way impair or interfere with existing provisions of other laws or ordinances (except those specifically repealed by this ordinance), or with private

restrictions placed upon property by deed, covenant, or other private agreement, or with restrictive covenants running with the land to which the city is a party. Where this ordinance poses a greater restriction that is imposed or required by such existing provisions of law, ordinance, contract or deed, the provisions of this ordinances shall control. (See 11 0.S. 41-110)

1.4. ADMINISTRATION.

In accordance with 11 0.S. 45-104, the provisions of this ordinance shall be administered by the Planning Commission acting in lieu of the governing body. (See 11 0.S. 45-104)

1.5. DEFINITIONS.

For the purpose of this section, the following terms, phrases, words and their derivations shall have the meaning given herein. When not inconsistent with the context, words used in the present tense include the future. Words in the plural number include the singular, and words in the singular number include the plural. The word "shall" is always mandatory; the word "may" is always directory.

a *BOARD OF COUNTY COMMISSIONERS*. The Board of County Commissioners of the county in which the land in question is located.

b. *CITY*. The City of Broken Arrow, Oklahoma.

c. *CITY (OFFICER*). The word "City" followed by the name of any officer means any officer or assistant to such officer employed by the City of Broken Arrow to fulfill any of the duties of the office named.

d. *CITY COUNCIL*. The Council of the City of Broken Arrow, Oklahoma.

e. *CONDITIONAL FINAL PLAT*. The plat proposed by the owner which has been submitted to the Technical Advisory Committee, Planning Commission and City Council, and received conditional approval, but which requires future performance by the owner before the receipt of final approval.

f. *COMPREHENSIVE PLAN*. A general development plan based upon the present and the projected future needs of the city as currently adopted or as may be hereinafter adopted by the City Council and duly recorded in the office of the County Clerk of Tulsa and Wagoner County, Oklahoma. The comprehensive plan may also be referred to as the master plan, and constitutes a plan which indicates the general locations recommended for the various functional classes of public works, places, and structures, and for the general physical development of the City of Broken Arrow; such a designation includes the entire body of such documents, or any unit or part thereof as may be separately adopted including amendments to such plan or parts thereof. (See the Plan of 1982 as modified by the Kenosha Corridor in 1984.)

g. *CONTRACTOR.* A person, firm, or corporation engaged in any aspect of the construction of improvements, including but not limited to street paving.

h. *COUNTY CLERK*. The Clerk of the county in which the land is located, unless the context indicates otherwise.

i. *CUL-DE-SAC.* A short street having one end open to traffic and being terminated at the other end by an open space designed to facilitate vehicular turn around.

j. *DEVELOPER.* The owner or agent of the owner of the land having the rights to subdivide and order the construction of improvements.

k. *DRIVEWAY ENTRANCES*. The ingress and egress for the property adjacent to a street, and being located between the street pavement and the street right of way line.

l. *ENGINEER*. A registered, professional engineer in good standing in the State of Oklahoma. (See 59 0.S. 475.1 et seq.)

m. *FINAL PLAT*. The map, drawing, or chart on which a owner's plan of subdivision is presented to the Planning Commission and to the City Council for approval, and which, if approved, will be submitted to the County Clerk for recording.

n. *HIGHWAYS.* See Streets and Alleys.

o. *HEALTH DEPARTMENT*. As to land located with Tulsa County, the cooperative Health Depart-ment of the cities located within Tulsa County and of Tulsa County, Oklahoma; as to land located within Wagoner County, the Wagoner County Health Department.

p. *IMPROVEMENTS*. Grading, street surfacing, construction of curbs and gutters, sidewalks, crosswalks, culverts, bridges, water lines, sanitary sewer lines, force mains and lift stations, storm sewer lines, other utilities, and other required features.

q. *LOT*. A parcel or portion of land in a subdivision or plat of land, separated by other parcels or portions by description as on a subdivision or record of survey map or by metes and bounds, for the purpose of sale or lease to or separate use of another.

r. *LOT SPLIT*. Any division of land into parcels totaling less than five (5), and into parcels each of which have an area of more than 2.5 acres, for the purpose of immediate or future transfer, or immediate or future ownership; or any division of land into precisely two parcels regardless of size, for the purposes of adding one of the newly created parcels to an adjacent lot, thereby effectively moving the boundary of the adjacent lot. (Ord. 1800, 9/20/93)

s. *MASTER PLAN.* The comprehensive plan.

t *OFFICIAL MAP*. The map established by the City Council showing the streets, highways, and parks heretofore laid out, adopted and established by law and any

amendments or additions thereto adopted by the Council resulting from the approval of subdivision plats and the subsequent filing of such approved plats.

u. *OPEN SPACE - PUBLIC*. Land which may be dedicated to or reserved for acquisition for general use by the public, including parks, recreation areas, school sites, community and public building sites and other similar lands. Open space public specifically does not include floodway drainage courses, public lakes and ponds or any area within the ten (10) year fully urbanized flood plain, but may include other areas in the 100 year fully urbanized flood plain.

v. *OWNER*. Any individual, firm, or corporation having sufficient proprietary interest in the land sought to be subdivided to commence and maintain proceedings to subdivide the land under this ordinance.

w. *PLANNING COMMISSION*. The Planning Commission of the City of Broken Arrow, Oklahoma.

x. *PLANS*. The general construction or engineering drawings of public improvements showing the layout and principal design features of a subdivision.

y. *PRELIMINARY PLAT*. A drawing or chart indicating the proposed layout of the subdivision to be submitted to the Planning Commission for its consideration. Such preliminary plat shall include designation of recreation areas, parks, playgrounds and other public open space and private open space, and showing all proposed buildings setbacks, and utility easements.

z. *SIGHT TRIANGLE*. An area of land located adjacent to the intersection of two (2) or more streets, which area of land is bounded by a line measured from the center of a connecting street and extended along the curb line of a corner lot for a distance of 75 feet, to an end point to form one boundary of the triangle; and bounded by a line measured from the center of the second connecting street and extended along the second curb line of the corner lot for a distance of 75 feet to an end point to form the second boundary of the triangle; and bounded by a straight line connecting the two (2) end points of the first two (2) boundaries. This triangle has been determined for regulatory purposes to be sufficient for the drivers of two (2) vehicles traveling at 25 miles per hour or less and approaching an uncontrolled intersection on separate, interconnecting, level and dry streets to view each other and take appropriate actions safely; this triangle has also been determined for regulatory purposes to be sufficient for pedestrian traffic which may be augmented by toys such as roller skates, skateboards, sleds, and similar devices.

aa. *STREETS AND ALLEYS.* A way for vehicular traffic, regardless of how designated. Where curbs are laid, the word "street" shall refer to that portion of the roadway between the curbs. Streets may be further designated as follows:

1) HIGHWAYS. A fast or heavy traffic street having limited access and used basically as a traffic artery for travel between Broken Arrow and other cities. Frontage roads associated with limited access highways are collector streets.

2) ARTERIAL STREET. A fast or heavy traffic street of considerable continuity and used basically as a traffic artery for travel among large areas of the city. Arterial streets may be further designated as primary or secondary arterial streets.

3) COLLECTOR STREET. A street which carries traffic from minor streets to arterial streets, including the principal entrance streets of residential development, and the streets for circulation within such a development.

4) MINOR STREET. A street used primarily for access to the abutting properties.

5) ALLEY. A passage or way affording generally a secondary means of vehicular access to abutting properties, and not intended for general traffic circulation.

bb. *SPECIFICATIONS.* The detailed working drawings and written technical instructions concerning public improvements as adopted by the City of Broken Arrow.

cc. *STAFF*. The entire staff and any member thereof of the Broken Arrow Planning Department, the Broken Arrow Engineering Department, and the Broken Arrow Inspections Department, including any future successors thereto.

dd. *STOP WORK ORDER*. A written order to the contractor or to the owner to stop work, and stating therein the nature of the reason for the issuance of such an order. Such orders may only be signed by the City Engineer, or the City Manager or his designate.

ee. *SUBDIVISION.*

1) The division of a parcel of land shown as a unit or contiguous units on the last proceeding tax roll into five (5) or more lots or parcels, any one of which contains 2.5 acres or less, for the purpose of transfer of ownership or building development; or,

2) If a new public street is involved, any division of a parcel of land; or,

3) The improvement of one or more parcels of land for residential, commercial, office, or industrial structures or groups of structures involving the division or allocation of land for the opening, widening, or extension of any street or streets (except internal private streets); the division or allocation of land as open spaces

for common use by owners, occupiers or lease holders, or as easements for the extension and maintenance of public utilities or facilities;

4) Provided that a division of land which may be ordered or approved by a court or effected by testamentary or intestate provisions, or a division of land for agricultural purposes into lots or parcels, or the exchange of parcels of land between owners of adjacent property to resolve common boundary disputes, where new lots are not thereby created and where neither of the lots resulting are reduced below the minimum size of a lot required by law shall not be deemed subdivision. The term includes resubdivision, and when appropriate in context, shall relate to the process of subdividing land or to the land so subdivided.

ff. *SURVEYOR.* A registered land surveyor in good standing in the State of Oklahoma. (See 59 0.S. 475.1 et seq.)

gg. *TECHNICAL ADVISORY COMMITTEE (T.A.C.).* A committee composed of the municipal staff, public utilities, which review preliminary plats and proposals for the final plats. The purpose of the committee is to review the various proposals to determine whether or not the technical elements of the construction plans and the subdivision plats meet or exceed the requirements in technical areas of the general public.

hh. *ZONING CODE*. The Broken Arrow Zoning Code and any amendments thereto. (See Ordinance 1560 and all amendments thereto.)

1.6 APPLICATION OF THIS ORDINANCE.

Except as provided in this ordinance, no person shall subdivide any tract of land which is located within the city nor shall any person create a lot split for any tract of land which is located within the city, except in conformity with the provisions of this ordinance.

1.7 ENFORCEMENT.

a. RECORDING OF THE PLAT. No plat of any subdivision shall be entitled to be recorded in the County Clerk's office or to otherwise to have any validity until it shall have been approved in the manner prescribed herein. In the event any such unapproved plat is recorded, it shall be considered invalid, and the Planning Commission or the City Council may institute legal proceedings to have the plat stricken from the records. (See 11 0.S. 41-106, 42-101D, and 45-104B; similar provisions in 19 0.S. 863.9 and 863.10.)

b. SALE OF LAND IN SUBDIVISION. No owner or agent of the owner of any land located within any actual or proposed subdivision shall offer, transfer, sell, agree to sell any land by reference to, exhibit of, of by the use of a plan or plat of a subdivision before such plan or plat has been approved and recorded in the manner prescribed herein; unless such agreement to sell is expressly made contingent upon the proper filing of the plat in question in advance of closing. Any sale or transfer contrary to the provisions of this section is void. The description of such lot or parcel by metes and bounds in the

instrument of transfer or other document used in the process of selling or transferring shall not exempt the transaction from the provisions of this ordinance. (See 11 0.S. 41-111)

c. CONSTRUCTION OF IMPROVEMENTS.

1) No owner proposing to subdivide any land located within the city shall proceed with any construction work on such proposed subdivision, including grading, until the owner has obtained from the Planning Commission approval of the preliminary plat of the proposed subdivision and the plans for development have been approved. Earth change permits may be required by separate ordinance.

2) The Building Inspector shall not issue building permits for any structure on a lot in a subdivision for which a final plat has not been approved and recorded in the manner prescribed herein, and for which all improvements have not been constructed. Provided that all proposed public improvements must be constructed, dedicated, and accepted prior to the issuance.

3) The staff shall not sell or authorize to be installed any taps to public water or sewer systems on any lot of a subdivision for which a plat has not been approved and recorded in the manner prescribed here, and for which all improvements have not been constructed. Provided that all proposed public improvements must be constructed, dedicated, and accepted prior to the sale or authorization.

d. PUBLIC SERVICES. The City will withhold all public services of whatsoever nature other than police and fire protection, but including the maintenance of streets and the furnishing of water or sewer facilities from all subdivisions which have not been approved, and from all areas dedicated to the public which have not been accepted in the manner prescribed herein. It is further the policy of the city to require the owner to comply with the general principals of design and minimum requirements for the layout of subdivisions as set forth herein.

e. REVISION OF PLAT AFTER APPROVAL. No changes, erasures, modifications or revisions shall be made in any plat of a subdivision after approval has been given by the Council, and endorsed in writing on the plat, unless said plat is first resubmitted to the Planning Commission and to the City Council and receives approval of the changes.

1.8. TECHNICAL ADVISORY COMMITTEE (T.A.C.)

The Technical Advisory Committee is hereby established, composed of one or more representatives of General Telephone, Southwestern Bell, Public Service Company, Oklahoma Natural Gas, Tulsa Cable TV, Union School District, Broken Arrow School District, U.S. Post Office, individual pipe line companies, and representatives from the following city departments or divisions:

a. Engineering.
b. Inspections.
c. Planning.
d. Fire Department.
e. Public Works.
f. City Manager.

Designated representatives from concerned districts such as Rural Water Districts, Rural Sewer Districts, and similar entities, and designated representatives of private individuals who express concern with the development may attend and participate in the discussion of proposed plats. The T.A.C. shall act as advisors to the Planning Commission.

1.9. SURVEYS AND MONUMENTS.

a. SURVEYS. All horizontal control points shall be tied to the Broken Arrow Plane Coordinate System. All vertical control points shall be tied to the United States Geological Survey (USGS). (See 11 0.S. 41-103)

b. MONUMENTS. Monuments of such material, size and length as may be approved by the City Engineer shall be placed at all block corners, angle points, points of curvature in streets, and at such intermediary points as shall be required by the City Engineer.

1.10 HEADINGS.

Headings are provided for reference purposes and are not to be used as interpretive guides. (Some headings have been added by the codifier.)

1.11 MINIMUM STANDARDS DESIGN CRITERIA.

In enacting various provisions of the Broken Arrow Land Subdivision Ordinance, and in promulgating any rules or regulations which may be made necessary in order to carry out the purpose of this Code, the City of Broken Arrow is merely setting forth certain minimum standards for construction which may not be violated in the construction of any public improvements. By setting forth these minimum standards, neither the City as an entity nor any of its staff is making any representations, warranties or assurances that these minimum designs are sufficient. Any person owning such land or developing land within the city limits of Broken Arrow must rely upon their own design professionals to design facilities whether public or private which are capable of providing the services required of such public or private facilities, and which are adequate under all reasonably foreseeable circumstances for the purposes intended. When the city staff examines proposals or construction plans for conformity with this Code, such review by city personnel merely is being performed to determine whether or not the minimum standards will be met. The approval of these plans does not represent, warrant, or assure any person that the designs are adequate for the purposes intended. Neither the enactment of

this ordinance nor review of improvements to be constructed or proposed under this ordinance shall in any manner create liability for the City of Broken Arrow to the owner, developer, or contractor nor to any person affected by the activities of such owner, developer or contractor.

ARTICLE 2. PROCEDURE

2.1 OWNER COMPLIANCE.

In planning, platting, and developing a subdivision, the owner shall comply with the design standards and the minimum requirements set forth in this ordinance.

2.2 PREAPPLICATION PROCEEDINGS.

Not less than ten (10) days before submitting the preliminary plat to the City Planner's Office, the owner or his Engineer shall consult with the Planning Department while the plat is in sketch form, to ascertain the location of proposed highways, arterial streets, collector streets, parks, playgrounds, school sites, other community facilities, and drainage courses in order to acquaint the owner with the city's requirements. This preapplication time period may be reduced by the Director of the Planning Department at his discretion. These preapplication proceedings shall be conducted in sufficient detail to allow the general features of the subdivision and its layout to be determined to the extent necessary for preparation of the preliminary plat.

2.3 PRELIMINARY PLAT.

a. FILING REQUIREMENT. The owner shall prepare a preliminary plat of the proposed subdivision which shall conform with the requirements of Article 4. The owner shall file with the City Planner's office a written application upon designated forms for the tentative approval of the preliminary plat. This filing shall be at least fifteen (15) days prior to the meeting of the Technical Advisory Committee. At the meeting with the Technical Advisory Committee, representatives of all public utility companies in attendance will review the plat and make recommendations prior to the review of the preliminary plat by the Planning Commission at the next available meeting.

b. PLAT COPIES. The preliminary plat shall be submitted in the form of twenty-three (23) black line or blue line prints of the proposed subdivision, which have been prepared by a Surveyor or Engineer. The preliminary plat shall show, on a map, all the facts needed to enable the Planning Commission to determine the proposed layout of the land in a subdivision is satisfactory from the standpoint of public interest. The preliminary plats shall be folded to 8 by 11 inches (41 0.S. 41-101).

c. ENGINEERING PLANS. Two (2) copies of the preliminary engineering plans which are prepared by an Engineer shall be submitted simultaneously with the submission of the preliminary plat map. These preliminary engineering plans shall include proposals concerning hydrology, topography, water, sewer, grading and paving which conforms with the specifications.

d. FEES. The owner shall pay all fees to the city and meet the bond or escrow requirements.

e. TENTATIVE APPROVAL. After receipt of the recommendations of the staff and the Technical Advisory Committee (T.A.C.), the Planning Commission shall tentatively approve the preliminary plat with any modifications, noting all such modifications on the plat. Upon rejection, or on approval subject to modifications, the Planning Commission may require the owner to submit a revised preliminary plat. Tentative approval of the preliminary plat shall be deemed to be an approval only of design features of the tract; the City Engineer or other officials having justification to modify engineering and construction details, may require modification as necessary for the protection of the public interest.

f. PLANNING COMMISSION ACTION TAKEN.

1) The preliminary plat shall be checked by the Planning Commission as to its conformity with the Comprehensive Plan of the City of Broken Arrow, as to the plats compliance with the standards, requirements, and principals hereinafter prescribed; and shall cause the pre-liminary plat to be checked by the Planning Commission staff to ascertain compliance with all applicable additional requirements of all governmental authorities and agencies, and with all applicable regulations of public utilities. The Planning Commission shall determine whether the preliminary plat shall be approved, approved with modifications, continued to a date certain, or disapproved and shall give notice to the subdivider in writing. (11 O.S. 45-104).

2) Upon approval or approval subject to modifications, the Planning Commission may require the owner to submit a revised preliminary plat. The approval of the preliminary plat by the Planning Commission shall not constitute final acceptance of the subdivision by the Planning Commission. Preliminary approval shall confer upon the subdivider the right for a two (2) year period from the date of approval that the general terms and conditions under which the preliminary approval was granted will not be changed. Preliminary approval as granted will not be changed, unless the City Engineer or other City official having proper justification to modify engineering and construction details requires modification as necessary for the protection of the public interest. (11 O.S. 41-109, 45-103 and 45-104).

2.4 CONDITIONAL FINAL PLAT.

a. REQUIRED CHANGES. The conditional final plat shall have incorporated all changes or modifications required by the Planning Commission, and otherwise shall conform to the preliminary plat and to the requirements of Article 5; the conditional final plat may be submitted in stages, each stage constituting only that portion of the approved preliminary plat which the subdivider proposes to record and develop at that time, provided that such portion conforms with all the requirements of this ordinance. (11 O.S. 45-l04).

b. COPIES. The conditional final plat shall be submitted in the form of thirty (30) black line or blue line prints of the proposed subdivision which have been prepared by a Surveyor or Engineer. The conditional final plat shall show, on a map, all the facts needed to enable the Planning Commission to determine the proposed layout of the land in the subdivision is satisfactory from the standpoint of public interest. The conditional final plat shall be folded to 8 by 11 inches.

c. TIME LIMITS. (11 0.S. 45-104C)

1) The conditional final plat shall be filed with the city at least fifteen (15) days prior to the T.A.C. meeting in which it is to be considered. The conditional final plat shall be filed with the city only after all appropriate securities for the benefit of the city have been provided to the City Manager's office.

2) Council approval of a conditional final plat shall be valid for a period of two (2) years from the date of the Council action, and may be renewed annually thereafter by the City Manager or his designate, based upon whether or not there have been changes in the design standards, specifications, or needs of the public during the interim.

d. ENGINEERING PLANS. Two (2) copies of the proposed engineering plans which are prepared by an Engineer shall be submitted simultaneously with the submission of the conditional final plat map. These preliminary engineering plans shall include proposals concerning hydrology, topography, water, sewer, grading and paving which conform with the specifications.

2.5 FINAL PLAT

a. APPROVAL BY THE CITY COUNCIL. The City Council shall provide for an adequate hearing after receiving a written report from the Department of Planning and Zoning, which report is in conformity with the actions taken by the Planning Commission. The City Council shall notify the subdivider of any conditions which may be imposed, and shall approve, approve conditionally, or disapprove the final plat, and shall notify the subdivider of the action taken. The approval of the Council or the refusal to approve shall take place within thirty (30) days from and after the date the plat was first submitted to the Council for final approval, unless the owner agrees in writing to an extension of this time period; otherwise said plat shall be deemed to have been approved and a certificate of the City Council as to the date of the submission of the plat for approval and as to the failure to take action thereon shall be sufficient in lieu of the written endorsement or evidence of approval required by law. The ground of refusal of any plat submitted or of regulations violated shall be stated upon the record of the City Council. (11 0.S. 41-106)

b. FINAL CHECKING. After City Council Approval of the conditional final plat, the owner shall meet all the required conditions as set out by the City Council the owner shall submit documentation to the staff for review to insure that all the required conditions have been satisfied. The final plat shall be a print on linen tracing cloth, cronaflex mylar,

or similar durable material, 24 inches wide by 36 inches long. When more than one sheet is used for any plat, each sheet shall be numbered consecutively and shall contain a notation giving the total number of sheets. There shall be a binding margin of l inches on the left side of the 35 inch length and l inch margins on all other sides. The owner shall then take a copy of the final plat to all area utility companies for their signature. The owner shall then submit the linen tracing cloth copy signed by the owner and the owner's surveyor and thirteen (13) black line or blue line prints to be stamped and signed by the City Manager.

c. BOND/ESCROW FOR CONSTRUCTION. Prior to the release of the final plat of the subdivision, the owner shall meet the bond requirements, escrow arrangements, letters of credit, or other equivalent device acceptable to the City Manager in an amount equal to the costs of the construction of all improvements. Such surety bond escrow arrangement, or letter of credit shall be subject to the condition that the improvements must be completed within one (l) year after approval of the final plat. In the event all or any portion of the improvements are not completed, the City may proceed with the work and hold the owner and the bonding company jointly and separately liable for the costs thereof, or pursue such other remedies as may be available. (11 O.S. 45-104C)

d. "AS BUILT" PLANS. Plans for each development within the jurisdiction of the City of Broken Arrow shall be provided to the City of Broken Arrow showing all improvements within the subdivision as actually constructed. One copy of this plan shall be supplied upon mylar by the owner upon final approval. Upon presentation to the City of all such "as built" plans, the City shall release all building permits which were held solely pending this performance. In the event the owner fails to present the "as built" plans within six (6) months following the completion of the construction, the City may pursue other legal remedies it may have against the owner, or to acquire, through contract or through litigation, copies of the "as built" plans.

e. FILED PLAT. No building permits shall be issued until the owner has supplied the City with seven (7) certified copies of the final plat, each showing proof of being filed and recorded in the Office of the County Clerk.

ARTICLE 3. SUBDIVISION DESIGN STANDARDS. (11 0.S. 45-104C)

3.1 MASTER PLAN AND OFFICIAL MAPS.

The proposed subdivision shall conform with the master plan and all official maps. Improvements which meet or exceed the design standards of this ordinance will be constructed within one (1) Year of approval of the final plat by the City Council. Failure to timely complete construction of all improvements shall result in the performance bond or escrow being paid to the city. All or any partial plat may be vacated and the city may pursue other available remedies.

3.2 GENERAL DESIGN STANDARDS.

a. STREETS.

1) The arrangement, character, extent, width, grade, names, and location of all streets shall conform to the master plan and shall be considered in their relation to existing and planned streets, to topographical conditions, to public convenience and safety, and in their appropriate relation to the proposed uses of the land to be served by such streets. Where not shown on the Comprehensive Plan, the arrangement and other design standards of the street shall conform to the provisions found herein. (11 0.S. 41-101 and 45-104)

2) All residential subdivisions which are designed to provide property for more than twenty dwelling units, or residential subdivisions which are designed for the potential development and extension beyond their present boundaries, shall be required to design and construct a minimum three-lane intersection with all arterial streets adjacent to the subdivision. Commercial and industrial developments exceeding five acres in size shall be required to design and construct a minimum three-lane intersection with all arterial streets adjacent to the subdivision. The design of three-lane intersections with arterial streets shall have the collector or minor street to be constructed with a four foot to ten foot wide median, so located as to provide for two outbound lanes and one inbound lane. One outbound lane shall be marked for right-turn traffic and one outbound lane shall be marked for left-turn or through traffic. Appropriate instructional signs, painting of the street lanes, or other appropriate markings should designate the authorized traffic movement for each lane. Appropriate right-of-way shall be provided through dedication of the streets so designed as to accommodate sidewalks, landscaping, utilities, storm water controls, and other accessory uses, as may be necessary at each location. The final design of such an intersection shall be approved through the subdivision plat review process. (Ord. 1738, 11/16/92)

b. NAMING STREETS. The arrangement for streets and new subdivisions shall make provisions for the continuation of the existing and adjoining areas, and street names shall

not duplicate or closely approximate existing street names except where the new streets are extensions of existing streets. All streets shall be platted in such a manner that all resulting lots will conform to the Zoning Code of the city. House numbers shall be assigned in accordance with the house numbering system now in effect in the city. All North and South thoroughfares shall be designated "Avenues". All East and West thoroughfares shall be designated "Streets" and street name signs shall be placed at all street intersections within or abutting the subdivision. Such signs shall be of a type approved by the City and shall be placed in accordance with the standards of the City. (11 0.S. 41-101)

c. ABUTTING UNSUBDIVIDED LAND. Where adjoining areas are not subdivided, the arrangement of streets and new subdivisions shall be carried to the boundary of the tract proposed to be subdivided, and provisions made for a temporary right-of-way for a turn around of a size acceptable to the City Engineer. Barricades shall be installed at dead-end streets. The City of Broken Arrow subdivision regulations shall govern alignments, grades, drainage, and other appropriate design criteria of all streets within and bordering new subdivisions where applicable.

d. ABUTTING HIGHWAY. Where a subdivision abuts or contains an existing highway, the Commission may require access roads and service lanes as may be necessary to afford separation of through and local traffic.

e. RAILROAD ON OR ABUTTING SUBDIVISION. Where a subdivision boarders on or contains a railroad right-of-way or limited access right-of-way, the Commission may require a street approximately parallel to and on each side of such right-of-way, at a distance suitable for the appropriate use of the intervening land, as for park purposes and residential districts or for commercial and industrial purposes in appropriate districts. Such distances shall also be determined with due regard for the requirements of approach grades and future grade separations.

f. HALF STREETS PROHIBITED. Half streets shall be prohibited, except where essential to the reasonable development of the subdivision in conformity of other requirements of these regulations, and where the Planning Commission finds it will be practical to require the dedication of the other half when the adjoining property is subdivided. Whenever a half street is adjacent to a tract to be subdivided, the other half of the street shall be platted within said tract.

g. ACCESS TO STREETS AND CROSS DITCHES. The owner shall provide access to all proposed streets, including necessary crossings of ditches and creeks, in a standard method approved by the City Engineer.

h. HARDSHIP TO OWNERS OF ADJOINING PROPERTY AVOIDED. The street arrangements shall not be such as to cause hardship to owners of adjoining property in platting their own land and providing convenient access to it.

i. REVERSE CURVES. A tangent at least 50 feet long shall be introduced between reverse curves on arterial and collector streets.

j. SUBDIVISION OF TRACTS IN LARGER THAN ORDINARY BUILDING LOTS. Where a tract is subdivided into larger parcels than ordinary building lots, such parcel shall be arranged so as to allow the opening of future streets and logical further resubdivision.

k. PRIVATE STREETS. Private streets shall not be approved except when required by state law, or in connection with a Planned Unit Development having appropriate controls. Public improvements shall never be approved for any private street.

l. STREET INTERVAL. In general, provisions should be made for a collector street at intervals not exceeding one half (½) mile.

m. CURBS, GUTTERS, AND DRAINAGE. Curbs, gutters, drainage and drainage structures shall be provided in accordance with the standard specifications of the city. Such construction shall be subject to inspection and approval of the City Engineer or his designate.

n. LIGHTING. Lights shall be provided at each street intersection within or abutting the subdivision and a type provided in accordance with standard specifications of the city.

o. SIDEWALKS. Concrete sidewalks shall be constructed along both sides of every arterial street, collector street, or minor street shown on the plat in accordance with applicable standard specifications of the city; provided that concrete sidewalks shall be constructed only on the one side of frontage roads opposite from the highway; provided further that sidewalks shall not be required on the interior of industrial subdivisions, unless the Planning Commission or the City Council determines that there is a need for such sidewalks for pedestrian movement to a residential subdivision or to a school site. After final acceptance by the city of the sidewalks, the maintenance thereof shall become the responsibility of the abutting property owners.

p. FLOOD AREAS. An area subject to periodic flooding is defined as land which is subject to the 100 year fully urbanized flood as established by the latest available information. Whenever a subdivision is proposed to be located in such an area, the City Council may approve the plat, provided the owner binds himself legally to make such improvements as, in the judgment of the City Council, will render the subdivision substantially safe and otherwise acceptable for the intended use. In this case, the owner shall post with the City Council a surety performance bond, running to the City of Broken Arrow, or other security acceptable to the City Council, sufficient to cover the costs of such improvements as estimated by the city officials having jurisdiction. The City Council may approve the plat, provided further that the owner shall include in the restrictive covenants a statement that owners of land which is adjacent to drainage easements shall be responsible for the maintenance of the easements in an open condition, and free of structures which would impede the flow of water across the easement. (Art. IX, Chapter 6 and Chapter 25 of the Broken Arrow Code; Article 2 and Article 3 of the Zoning Code)

q. BUFFER OF HIGHWAYS AND ARTERIALS. In platting lands abutting federal or state highways, or arterial streets, every effort shall be made to reduce the adverse impact

of heavy or high speed traffic on such lands, especially where used for residential purposes; to minimize interference with through traffic operations; and to reduce vehicular and pedestrian accident hazards. To accomplish these purposes, lots abutting such thoroughfares should be platted at generous depth, and vehicular access to such lots shall be provided by means of minor streets, alleys in the rear, or access streets immediately along side the traffic way; or the frontage of such lots shall be reversed and the lots may be front on a minor street paralleling the thoroughfare at a distance of appropriate lot depth, with all private driveways connecting to such minor street; or a collector street may be located to parallel to such thoroughfare at a distance not less than 100 feet nor more than 1,000 feet, and loop streets or cul-de-sacs may be extended from such collector street toward the thoroughfare, the ends of which will give the access to the lots abutting the thoroughfare immediately along the rear or side lot lines.

r. COLLECTOR STREETS. Collector streets shall be so located as to provide for smooth traffic flow within the areas served, but in such a way as to discourage through traffic. Collector streets should normally be continuous for distances of not more than one mile, and offsets which are likely to induce continuing of traffic flow beyond that distance shall be avoided.

s. BLOCKS. Blocks shall have sufficient depth to provide for two (2) tiers of lots of appropriate depth, except in the case of reverse frontages.

1) Each lot shall be provided with access to a public street or highway to assure convenient ingress and egress to and from such lot, and to provide adequately for the layout of utilities, garbage and waste removal, fire and police protection and other services, and to protect and further the public health and safety generally. Subdivisions intended for commercial or industrial occupancy shall have residential street or residential collector street under any circumstances, except in the case of appropriately separated planned retail centers.

2) For the purpose of assuring traffic safety and efficient traffic operations on the thoroughfare system and the county highway system, non-access provisions shall be made to the satisfaction of the City along all collector and arterial streets. A description of such non-access provisions shall be affixed to the final plat.

3) The number of intersecting streets along arterial streets and highways shall be held to a minimum. Blocks along such arterials and highways shall generally not be less than 1,200 feet in length.

t. STREET JOGS. Street jogs with the centerline offsets of less than 125 feet for minor streets or less than 150 feet for collector streets shall be avoided.

u. CUL-DE-SAC STREETS. Cul-de-sacs, designed to be permanent, should not be longer than 550 feet and shall be provided at the closed end with a turnaround having an outside right-of-way diameter of at least 100 feet and a paved radius of not less than 40 feet; provided that the Planning Commission may expressly grant permission for the developers to design for the construction of longer cul-de-sacs.

v. MINOR STREETS. Minor streets shall be so laid out that their use by through traffic will be discouraged.

w. STREET WIDTHS. Street right-of-way widths shall not be less than as follows:

Street Type	Width in Feet
Intersection of 2 arterials (for a distance of 1,070 feet in each direction from the center of the intersection)	140
Arterial - Primary	120
Arterial - Secondary	100
Collector - Industrial or Commercial	80
Collector - Residential	60
Minor	50
Alley	20

x. INTERSECTIONS. The intersection of more than two (2) streets at one point shall be avoided, except where it is impractical to secure a proper street system otherwise. Streets shall intersect one another at an angle as near to a right angle as possible, and no intersections of streets at angles less than 45 degrees shall be approved. "T" intersections (three way) are encouraged for all streets except arterials and highways. Property line corners at intersections involving arterial streets shall be clipped by an angle of 45 degrees at a distance of at least 25 feet.

y. FOUR (4) LANES. In the event of an arterial requiring pavement width greater than 36 feet, the owner shall discuss with city officials having jurisdiction the matter of partial funding at city expense so that pavement widths wider than 36 feet can be conducted simultaneously with development.

z. INCLUDED IN "STREETS". Streets shall include earth work, treated subgrade, wearing surface, concrete curbs and gutters, proper backfill, and proper storm drains and inlets.

aa. BUILDING AND STRUCTURE SETBACKS FROM ALL HIGH PRESSURE PIPELINES. All residences, buildings, and other habitable structures shall be set back a minimum of fifty feet (50') away from all high pressure pipelines, which pipelines are under the regulatory jurisdiction of the United States Department of Transportation. (Amended by Ordinance 2008, dated July 15, 1996)

3.3 EASEMENTS

a. UTILITY EASEMENTS. Easements with a right-of-way width of 11 feet shall be provided on each side of all rear lot lines and along certain side lot lines when necessary for utilities. Easements with a right-of-way width of 17.5 feet shall be provided around the perimeter of the subdivision. T.A.C. may modify these requirements.

b. DRAINAGE EASEMENTS. Where a subdivision is traversed by a water course, drainage way, channel, or stream, there shall be provided a storm water easement or drainage right-of-way conforming substantially to the contours of the 100 year flow for such water course (whether or not it is a part of the regulatory flood), and such further width or construction or both, as will be adequate for the purpose.

c. EASEMENTS IN REAR. Where practical, easements for all utilities including poles or underground conduits for electrical and communication lines shall be provided along rear and side lot lines. Such lines will be placed underground, unless the topography or the geological conditions make underground utilities impossible.

d. FIRE HYDRANTS AND WATER LINES. All fire hydrants necessary to meet the applicable standards of the City of Broken Arrow, and all water lines upon which fire hydrants are fixed must be placed within an easement dedicated to the public of sufficient width to provide access for maintenance to all portions of the line and to the fire hydrant. The City shall not accept or approve any plans or any plats which authorize construction of fire hydrants on a line not located in a public easement. [Amended by Ordinance 1419 dated 9/2/86.]

3.4 LOTS. (11 0.S. 41-102)

a. DIMENSIONS. Lot dimensions in area and in frontage shall not be less than the requirements under the Zoning Code, or PUD requirement.

b. ACCESS. All lots shall abut on a publicly dedicated street, or on a private street if the City Council specifically approves the creation of such private street under provisions of a PUD.

c. SIDE LOT LINES. Side lot lines shall be substantially at right angles to straight street lines or radial to curve street lines.

d. CORNER LOTS. Corner lots shall have extra width to provide appropriate building setback from and orientation to both streets. Lots abutting on a pedestrian walkway shall be treated as a corner lot.

e. UNINHABITABLE LOTS. Lots subject to flooding and lots deemed by the Planning Commission to be uninhabitable shall not be platted for residential occupancy nor for such other uses as may increase danger to health, life or property or aggravate the flood housing; such land within the plat shall be set aside for such uses as are consistent with other provisions of the Broken Arrow Code; provided that all remnants of lots below

minimum size left over after subdividing of a larger tract must be added to adjacent lots, rather than be allowed to remain as unusable parcels.

f. DEPTH OF LOT. Excessive depth in relation to width shall be avoided; depth to width ratios of 1 to 1 or 2 to 1 will normally be considered appropriate.

g. YARD REQUIREMENTS. Lots for residence purposes shall have sufficient width at the building setback lines to permit compliance with side yard or distance requirements under the applicable Zoning Code and still be adequate for a building of practicable width.

h. DOUBLE FRONTAGE AND LIMITS OF NO ACCESS - Double frontage lots shall not be allowed and no individual lot in any residential subdivision shall have a curb cut nor a drive, nor a vehicular opening onto any arterial street or limited access facility. Limits of no access (L.N.A.) shall be placed on all plats created hereafter to prohibit driveways, curb cuts, and roadways for individual lots on arterial streets and limited access roads. (Amended by Ordinance 1993, dated May 20, 1996)

i. PRIVATE SEWER FACILITIES. Where public sanitary sewer facilities and/or water facilities are not accessible, the lot size shall be increased adequately.

ARTICLE 4. CONTENTS OF PRELIMINARY PLAT. (11 0.S. 41-102)

4.1 FORM

The preliminary plat shall be clearly and legibly drawn by a Surveyor. The size of the map shall not be less than 22 by 34 inches and shall be drawn on the scale of one inch equals 100 feet. (11 0.S. 41-108)

4.2 PLAT MAP CONTENTS

The preliminary plat shall contain the following information:

a. DESCRIPTION

1) Proposed name of the subdivision. The name shall not duplicate, be the same in spelling or alike in pronunciation with any other recorded subdivision.

2) Legal description according to the real estate records maintained by the County Clerk's office.

3) Names of adjacent subdivisions.

4) Names and addresses of the owner, the owner's Surveyor, and the owners' Engineer.

5) Location by section, town, range, township, county and state.

6) Names and locations of streets adjoining the proposed subdivision, and the nearest existing highways, streets and alleys in adjoining subdivisions and tracts which are involved in producing the most advantageous development of the entire neighborhood.

7) The scale actually used.

8) Important features such as existing permanent buildings; large trees and water courses; railway lines; oil and gas lines or wells as shown on the records of the Oklahoma Corporation Commission (including abandoned or gas or oil wells and dry holes which remain unplugged), existing utilities including sewer, water mains, culverts and other underground structures within the tract or immediately adjacent thereto, showing pipe sizes and grades indicates; contours at intervals of 2 feet which are referenced to USGS data; and any other relevant feature necessary for a full and complete understanding of the proposed subdivision.

9) Title of document and a vicinity sketch drawn to a scale of a maximum of 2,000 feet to the inch.

10) Copies of any private restrictions to be included in the deeds shall be attached to the preliminary plat.

b. EXISTING CONDITIONS

1) Boundaries of the subdivision indicated by heavy line and the approximate acreage.

2) Location, width and names of existing or platted streets, railroad rights-of-way, easements, parks, permanent buildings, section and corporation lines.

3) Zoning district boundary lines, proposed front yard setback lines, and sight triangles for corner lots.

4) The location and widths of easements of all oil, gas, and petroleum products pipe lines.

5) Regulatory flood boundaries, and the ten (10) year flood boundaries.

6) The location of all unplugged oil or gas wells.

c. SURVEY DATA.

1) Existing contours with intervals of not more than 2 feet where the slope is greater than 1 percent, and not more than 1 foot where the slope is less than 1 percent. Elevations are to be based on USGS datum.

2) Proposed streets, drainage channels, wooded areas, power transmission lines and poles, and any other significant items should be shown. The map shall show layouts, names, widths, and sizes.

3) The layout, numbers and approximate dimensions of proposed lots.

d. DRAFTING OF PLAT. Date of preparation, scale of map, and north point.

e. Location and principal dimensions for all proposed streets, alleys, easements, lot lines, and areas to be reserved for public use.

4.3 OTHER INFORMATION

a. COVENANTS. Proposed covenants and deed restrictions, if any.

b. WATER SOURCE. Source of water supply.

c. SEWAGE DISPOSAL. Provisions for sewage disposal.

4.4 CONSTRUCTION PLANS

The preliminary construction plans and other engineering data for water, sewer, paving and drainage as prepared in accordance with the design specifications and certified by an Engineer shall be submitted to the City Engineer's office with the preliminary plat. No hearings or reviews shall be scheduled until both the preliminary construction plans and the preliminary plat have been submitted.

ARTICLE 5. CONTENTS OF FINAL PLAT. (11 0.S. 41-102)

5.1 FORM

The final plat shall be clearly and legibly prepared by a Surveyor or Engineer. The size of the map shall not be less than 22 inches by 34 inches and shall be drawn to the scale of one inch equals 100 feet, unless the City Manager or his designee authorizes a different scale in writing.

5.2 MAP CONTENTS

a. DESCRIPTION.

1) The map contents for a final plat shall include all information required to be contained in a map for a preliminary plat under 4.2.

2) Name of subdivision and the name and number of any larger subdivision of which this tract now subdivided was once a part.

3) Where provisions are made for access to an adjoining lake or stream, a sketch illustrating such access shall be submitted.

4) Names, widths, and location of streets adjoining the plat or paralleling the exterior boundaries of the plat.

5) Number of lots and the acreage platted.

b. EXISTING CONDITIONS

1) BOUNDARY LINES. All plat boundary lines with lengths of courses to hundredths of a foot and bearing to seconds. These boundaries shall be determined by an accurate survey in the field, which shall be balanced and closed with an error of closure not to exceed 1 to 10,000. Survey shall be tied to the Broken Arrow Plane Coordinate System tied to and computed on this system.

2) BEARING DISTANCES. True bearings based upon the Broken Arrow Plane Coordinate System and distances to nearest established section corners, other established survey lines, or other official monuments, which monuments shall be located or accurately described in the plat.

3) LAYOUT. The exact layout including:

A. Street and alley lines, including their names, bearings, angles of intersection and widths (including widths along the line of any intersecting street):

B. The length of all arcs, radii, points of curvature, and tangent bearings;

C. All easements and rights of way, when provided for or owned by public services (with limitation of the easement rights definitely stated on the plat) including the volume and page number where separate instruments are filed.

c. SURVEY DATA

1) SETBACK LINES. Setback building lines as fixed by the Zoning Ordinance or the official street plan and any other setback line or street lines established by public authority, and those stipulated in the deed restrictions.

2) PROPERTY OFFERED FOR DEDICATION. The accurate outline of all property which is offered for dedication for public use, and of all property that may be reserved by covenant in the deeds for the common use for the common use of the property owners in the subdivisions, with the purpose indicated thereon. All lands dedicated to the public other than streets or roads shall be marked "dedicated to the public". (11 0.S. 41-109)

d. DRAFTING THE PLAT. Scale of map, and north points.

e. PROPOSALS FOR NEW CONSTRUCTION. (11 0.S. 45-104C)

1) All easements and right-of-way provided for public services or utilities, including any limitations of such easements; street and alley lines, including names, bearings, angle of intersection and widths.

2) All lot numbers and lines, with accurate dimensions in feet in hundredths, and with bearings or angles to streets and alleys.

3) Accurate outlines of any areas to be dedicated or temporarily reserved for public use with the purpose indicated thereon.

4) Building setback lines with dimensions.

5) In case the subdivision is traversed by water course, channel, stream, or creek, the prior or present location of such water course, channel, stream, or creek shall be shown on the plat and the boundary of the regulatory flood and the ten (10) year flood. It will be assumed that there is no significant difference between the two (2) and the regulatory flood will be used, unless the owner shows the ten (10) year flood on the map.

6) Accurate location and material of all monuments shall be shown on the construction plans. Broken Arrow Plane Coordinate System shall be indicated for each monument.

7) Final construction drawings for all public improvements constructed or to be constructed in the subdivision.

5.3 OTHER INFORMATION.

a. COVENANTS. Protective and restrictive covenants including use restrictions shall be shown on or with the plat.

b. LOTS AND BLOCKS. All lot lines with dimensions and feet in hundredths, and with bearings and angles to minutes and seconds at other than right angles to the street and alley lines. Lots shall be numbered in numerical order. In tracts containing more than one block, the block shall be likewise numbered in numerical order. In the case of a resubdivision of lots in any block, such resubdivided lot shall be designated by their

original number prefixed with the term most accurately describing such division (e.g. West Half of 3, North 40 feet of 5, etc.), or they shall be designated numerically beginning with the number following the highest lot numbered in the block prior to the resubdivision. (11 0.S. 41-102)

c. PLANNING COMMISSION AND COUNCIL APPROVAL. Construction plans for the improvements shall be certified by the owner's Engineer and shall be submitted to the office of the City Engineer. The Planning Commission shall advise the City Council whether or not the plat meets all applicable requirements and forward same to the Council, whose final approval and certificate of compliance shall be affixed to the final plat. Prior to certifying that the plat meets all applicable requirements, the Council may request affidavits, certificates, acknowledgments, agreements or endorsements from any public agency concerned including the City Manager as to Engineering requirements and specifications, the Health Department as to public health regulations, the Utility Board as to regulations concerning public water and sanitary sewer facilities, the State Highway Department as to coordination with existing planned and state federal highways (if applicable).

d. SURVEYOR'S CERTIFICATE. Affidavit and certificate by the owner's Surveyor to the effect that he has fully complied with the requirements of this ordinance and the subdivision laws of the State of Oklahoma governing surveying, dividing and mapping of the land; that the plat is a correct representation of all the exterior boundaries of the land surveyed and the subdivision of it; that the plat represents a survey made by him and that all monuments indicated thereon actually exist in their location, size and material are correctly shown. (11 0.S. 41-104; 59 0.S. 475.22a)

e. OWNER'S CERTIFICATE. A certificate by the owner of the land in substantially the following form: "As owner, I hereby certify that I have caused the land described in this plat to be surveyed, divided, mapped, dedicated and access rights reserved as represented on the plat." Dedication of the streets, easements and other public areas shall be made as a part of this certificate. This certificate shall be executed in the same manner as a real estate conveyance is executed. (11 0.S. 41-104)

f. ACKNOWLEDGMENT REQUIRED FOR MINIMUM IMPROVEMENTS. The owner shall acknowledge the several improvement requirements as set forth herein by notation on the final plat which shall be worded substantially as follows: "All streets shall be graded, base material applied and surface paved in accordance with the standards and specifications of the City of Broken Arrow to include curbs and gutters, street name signs erected, visual screens established, utilities and street lights installed, sidewalks constructed, drainage structures constructed in accordance with the approved plans on file in the office of the City Engineer by the owner, at his expense, and in compliance with and to the standards, plans and specifications of the City Council. All required improvements shall be constructed within one (1) year of approval of the final plat by the City Council. Provided that interior sidewalks shall be constructed at the time of actual development. The street, sidewalks and storm sewers shall be maintained in good repair by the owner for a period of five (5) years after the City's written approval of the construction, and all other improvements shall be maintained in good repair by the owner for a period of three (3) years after the City's written approval of the construction.

g. WATER SUPPLY. Source of water supply.

h. SEWAGE DISPOSAL. Provisions for sewage disposal.

i. Legend of the codes and abbreviations used on the plat.

5.4 CONSTRUCTION PLANS.

a. PROPOSED PLANS. The proposed construction plans and other engineering data for water, sewer, grading, paving and drainage as prepared and certified by an Engineer shall be submitted to the City Engineer's office with the proposed final plat. Water valves and water crossings shall be shown on the paving plans. No hearings or reviews shall be scheduled until both the proposed final plat and the proposed construction plans have been submitted.

b. MONUMENTS. Accurate location and material of all monuments shall be shown on the construction plans.

c. BENCH MARKS based on USGS data shall be shown.

d. DRAWINGS OF IMPROVEMENTS. Construction drawings for all other public or common improvements constructed or to be constructed in the subdivision.

ARTICLE 6. LOT SPLITS, EXCEPTIONS, AND LIMITS OF ACCESS
(Amended by Ord. 1337)

6.1 LOT SPLITS

a. SURVEY. The Planning Commission may require applicants for a lot split to submit a sketch, plat, record of survey, and any other information it deems pertinent to its determination.

b. PLANNING COMMISSION REVIEW. Any proposed lot split shall be submitted to the Planning Commission for review. If the Planning Commission is satisfied that such proposed lot split is not contrary to the applicable regulations, it shall approve such lot splits within thirty (30) days after submission, and upon presentation of a conveyance of said resulting parcel, shall stamp the same "I hereby certify that this Lot Split was approved by the Broken Arrow Planning Commission on _____ BAL No. ____" and be signed by the official designated by the Planning Commission.

c. PUBLIC UTILITIES. Applications for lot splits shall be signed by the various public utilities to establish the existence of adequate public easements to serve the resulting lots prior to being submitted to the Planning Commission.

6.2 ADDITIONAL IMPROVEMENTS REQUIRED - R-E SUBDIVISIONS

Whenever a large lot residential estate subdivision is planned within a "R-E" single family Residence Zoning District, then the following standards or requirements may be substituted where applicable for the improvements required elsewhere in this ordinance, or may be required in addition to other requirements of this ordinance.

a. RIGHT-OF-WAY WIDTH. A minimum right-of-way of 60 feet will be required of all minor streets within such subdivision.

b. STREET PAVING WIDTH. A minimum of 24 feet of paving will be required of all minor streets within such subdivision.

c. STREET CONSTRUCTION. Curbs and gutters will not be required. A minimum of 6 ½ inches of asphaltic concrete; or, 6 inches of Portland Cement will be required; and the streets will otherwise comply with the remaining design standards adopted by the city.

d. STORM DRAINAGE. Adequate storm water drainage will be provided by a storm water sewer; or, bar ditches may be used provided that they are sodded, and further provided that when the velocity of water in the ditch is expected to exceed 6 feet per second, then the ditch will be lined with concrete or other acceptable devices to prevent erosion. Where private drives cross a drainage ditch, a minimum of 15 inches culvert pipe and a standard head wall with wings will be required for each private drive.

6.3 UNDUE HARDSHIP

a. STANDARDS TO DETERMINE HARDSHIP. In any particular case where the owner can show in writing that by reason of exceptional topographic or other physical conditions, none of which are self-imposed, literal compliance with any requirement of this ordinance would cause exceptional and undue hardship, the City Council may modify such requirement to the extent necessary so as to relieve such difficulty or hardship; provided that such relief may be granted only without resulting detriment to the public interest and without impairing the intent and purpose of this ordinance or the Comprehensive Plan and the Zoning Code. Any modification that is granted may be granted by the City Council only after receiving written recommendations from the Planning Commission.

b. WRITTEN APPLICATION. Where unusual or exceptional factors or conditions exist, the City Council may modify any of the provisions of the Land Subdivision Code except those providing for the time of installation of improvements or requirement of improvement performance bonds and maintenance bonds. An owner applying for a modification shall set forth in writing the reasons for the requested modification and the extent of the modification requested. The Planning Commission shall review the petition for a hardship exception and shall make recommendations, including suggested modifications, to the Council. The Council shall thereafter hear the petition, review the Planning Commission recommendations and grant such relief as may be proper. If granted, such modification shall be added and attached to all copies of the construction plans or the final plat.

6.4 CEMETERIES

All public or private cemeteries must be platted under this ordinance. However, once the original plat has been approved and filed of record, all subsequent replats of the interior of the cemetery are exempt from this ordinance, unless the proposed replat would require the addition or alteration of existing public easements or public facilities, or requires additional points of ingress and egress from public streets.

6.5 LIMITS OF ACCESS

a. When any land has been platted under this Code, or under other applicable law, and the owner of all land affected by the proposal wishes to add limits of no access to the plat, or wishes to remove or otherwise alter limits of no access on the plat, such action shall not require replatting, nor shall it require vacation of the old plat. The owner shall prepare an application specifying the legal description of all land affected by the change, certifying that the owner of the equitable title in the land desires the change, identify the plat by name and plat number as filed in the appropriate county and specifying proposed changes in detail. Such application shall include a sketch site plan showing the requested modifications, all existing curb cuts, buildings, drives, parking areas, and other relevant items, and also including all proposed curb cuts.

b. The applicant shall pay to the City a site plan application fee and shall file the application with the Planning Department, forwarded to the City Engineer's office for review by both departments. The review shall include an evaluation of whether the proposed changes would tend to increase problems with the public traffic flow, utility easements and the implementation of various plans adopted by the City, or would create problems with the flow of traffic on private streets owned by persons other than the applicant.

c. The application shall then be submitted with a staff recommendation to the Planning Commission for hearing. In the event the Planning Commission approves the application, the Commission shall affix its signature and seal to the application and shall forward the instrument to the appropriate County Clerk to be filed of record. Effective as of the date of such filing, the area of limits of no access previously existing and which were sought to be removed, shall be held expressly vacated by this action, and any new limits of no access shall be binding upon all parties to whom constructive notice is so given. In the event the Planning Commission rejects the application, the Planning Commission shall so indicate on the original of the application form, which shall be filed in the City records. (Amended by Ordinance 1337 dated June 17, 1985)

ARTICLE 7. ENGINEERING DESIGN STANDARDS
(Amended by Ord. 1839, dated March 21, 1994)

7.1 ENGINEERING SPECIFICATIONS

a. SCOPE: The design standards established in this section are the minimum acceptable design standards. Parties developing subdivisions in the City must meet these minimum standards and are encouraged to exceed them where it is in the best interest of the developer and/or the City.

b. IMPLEMENTATION: The City shall prepare Standard Construction Specifications for implementation of the design standards established in this ordinance. These specifications shall apply to construction of all streets, utilities, and public facilities. The City Manager shall be responsible for adopting the standard construction specifications in accord with current good construction practices as required.

7.2 STREET AND SIDEWALK SYSTEM STANDARDS

a. GENERAL: All streets and drainage shall be designed by an Engineer registered in the State of Oklahoma. Designs shall be based on a thorough geotechnical investigation of the proposed site. Streets shall include as a minimum the wearing surface, base course, subgrade, subgrade drainage (if required), concrete curbs and gutters or borrow ditches where allowable, proper storm drain and inlets, and the drainage structures necessary to remove storm water from the right of way.

b. GEOMETRIC DESIGN:

1) Proposed streets shall intersect one another as nearly at right angles as topography and other limiting design factors permit.

2) To the maximum extent possible, minor street intersections with collector streets shall be three (3) way "T" intersections. Four (4) way intersections involving minor and collector streets shall be avoided unless dictated by design principles and standards.

3) Collector street intersections with arterials shall match the location of existing or proposed collector streets of the adjoining subdivisions to provide a four (4) way intersection, unless topography or other limiting factors prohibit such an intersection.

4) Residential Minor and Collector streets shall utilize design methods to limit operating speed to 25 miles per hour. These shall include but are not limited to use of curves, restricting straight street to 900 feet or less, and offsetting streets through "T" intersections.

c. PAVEMENT DESIGN:

1) Pavements shall be designed in accordance with current AASHTO standards.

2) The minimum weighted structural number for pavements in Broken Arrow shall be as follows:

A. Minor and high density minor - 3.9
B. Residential, commercial, and industrial collectors - 4.4
C. Arterials - 5.0

3) Acceptable coefficients for conversion of depth of various types of materials are as follows:

Type of Layer	**Coefficient Per Inch of Depth**
Sub-base	
Sandy Gravel	0.11
Sand, Sandy Clay	0.05-0.10
Lime-treated Soil	0.11
Lime-treated Clay, Gravel	0.14-0.18

Type of Layer	**Coefficient Per Inch of Depth**
Base	
Sand Gravel	0.07
Crush Stone	0.14
Cement Treated Base (CTB)	
>650 psi	0.23
400-650 psi	0.20
<400 psi	0.15
Bituminous Treated Base (BTB)	
Course	0.34
Sand	0.30
Lime Treated Base	0.15-0.30
Soil Cement	0.20
Lime/Fly Ash Base	0.25-0.30
Surface Course	
Plant Mix	0.40
Road Mix	0.20
Sand Asphalt	0.40
Concrete	0.50

4) Table 7.1 provides the minimum specific widths, grades, loadings and other requirements for design of streets in Broken Arrow.

d. BASE:

1) Base material may be either crushed aggregate, bituminous treated base, lime or cement treated material, or material treated with appropriate materials.

2) When crushed aggregate is specified, it will be either Type A or Type B as defined in Section 703 of the ODOT Standard Specification. Type selection will be made by the design engineer.

3) Bituminous treated base shall be either coarse aggregate bituminous base or Type A asphaltic concrete as defined in Section 708 of the ODOT Standard Specifications.

4) When treated material is used as a base, it will be treated in accordance with the appropriate ODOT Standard Specification.

5) Compaction of base material will be in accordance with the appropriate ODOT Standard Specification and the design requirements.

e. SUBGRADE

1) Design Testing: The owner shall have borings and soil tests made to determine the stability and bearing capacity of the subgrade. Such testing, at appropriate intervals, shall be accomplished by a licensed engineer specializing in geotechnical investigations and an approved laboratory. The Geotechnical Engineer shall coordinate the soil borings and tests with the City Engineer and obtain approval of the sample and boring sites prior to executing the field work. When possible the City shall have a representative on site during geotechnical investigations. The City Engineer will maintain a list of laboratories and geotechnical engineers that are not approved for work in the City of Broken Arrow. All others shall be considered approved. A copy of the geotechnical report will be forwarded with the preliminary plans for the subdivision streets. This report shall include recommendations for modifications to subgrade that are required to stabilize the subgrade and or improve its bearing capacity.

2) Material: All subgrade material shall be free of organic matter. All material with a plasticity index (PI) of ten (10) or more shall be treated with appropriate material to reduce the PI to less than ten (10). All material that is nonplastic shall be treated with appropriate materials to provide a stable, proper strength subgrade.

3) Preparation: Subgrade shall be prepared to a minimum depth of eight (8) inches: By discing, ripping, addition of required materials, and/or other forms of manipulation. The final subgrade shall be compacted to 95 percent of standard density at plus or minus two (2) percent of the optimum moisture content.

4) Special Conditions:

A. When underground water sources are encountered they shall be drained away from the subgrade with appropriate drains approved by the City.

B. Fill areas through old creek channels, ditches, ponds and other drainage structures shall be excavated and backfilled with suitable material; low areas shall have underground drains approved by the City that will prevent saturation of subgrade. In areas where soil strength is not sufficient to support the roadway, geotextile fabric may be used with approval of the City.

C. In areas where soil strength and or stability is not sufficient to support the roadway, rock or rock with geotextile may be used to improve the subgrade with approval of the City.

f. CURB AND GUTTER:

1) All curb and gutter shall be constructed of 3500 PSI Portland cement concrete in accordance with the City of Broken Arrow Standard Construction Specifications.

2) Except where borrow ditches are allowed by code or exception, all streets built to final width shall be constructed with curb and gutter.

3) Streets constructed to an interim width shall be constructed with curb and gutter unless otherwise approved by the City.

4) All gutters not integral to a concrete pavement shall have a minimum width of eighteen (18) inches and a minimum thickness equal to the minimum equivalent concrete thickness of the pavement under construction.

5) Curbs on all arterials shall be barrier type at the widened and tapered portions of intersections and mountable type through the remainder of the street. These curbs shall have a minimum height of six (6) inches and a minimum width of eight (8) inches. Exceptions to this criteria will be granted by the City Manager on a case by case basis.

6) Curbs on all other streets shall be barrier type and have a minimum height of six (6) inches and a minimum width of six (6) inches. Exceptions to this criteria will be granted by the City Manager on a case by case basis. Exceptions must be requested in writing by the Developer prior to plan submittal.

7) All curbs shall have handicapped access ramps, in accordance with the Americans With Disabilities Act and its supporting standards.

g. SIDEWALKS:

1) Vertical Alignment: Sidewalks in general, shall follow the vertical alignment of the top of curb or the crown of the adjacent street. They shall be positioned to preclude low areas where water will stand on the sidewalk or soil will collect.

2) Where sidewalks cross drainage features, an appropriate drainage structure will be placed under the sidewalk. Where drainage structures present a danger to pedestrian traffic they will have appropriate hand rails that meet minimum OSHA standards.

3) When bridges are installed on sidewalks, they shall be of precast concrete or a design approved by the City. All bridges shall have handrails meeting minimum OSHA standards, a six (6) foot chainlink fence on both sides is acceptable.

4) Sidewalks shall be constructed within the street rights-of-way at a distance no less than one (1) foot from the abutting property lines and shall be no less than six (6) feet from the outside curb line of the street pavements, except at intersections or as approved by the City, and comply with the specific requirements of table 7.1.

5) All sidewalks shall be constructed of 3500 PSI Portland cement concrete in accordance with the City of Broken Arrow Standard Construction Specifications. The finished thickness of Portland cement concrete sidewalks shall be not less than four (4) inches and the width shall be not less than four (4) feet.

6) Sidewalks shall be designed and constructed free of obstructions. No fences, utility poles, fire hydrants, or other structures shall encroach on the paved sidewalk. Sidewalks shall be designed and constructed to connect to the sidewalks of abutting subdivisions. Where a drainage way is excluded from a subdivision the developer shall provide a sidewalk and an associated easement across the drainage way as part of the adjacent development.

7) Sidewalks shall provide access in accordance with the Americans With Disabilities Act.

8) After final acceptance of the sidewalk construction by the City, maintenance of sidewalks shall be the responsibility of property owners whose properties abut the right-of-way line along which the sidewalk has been constructed.

h. PAVEMENTS:

1) All pavements shall be constructed of either Portland cement concrete or asphaltic concrete, and base courses and thicknesses shall be in accordance with standards in Table 7.1.

2) Portland Cement Streets:

A. Portland cement concrete shall be 3,500 PSI designed in accordance with City of Broken Arrow specifications.

B. Portland cement concrete streets shall have either a curb and gutter or an integrally placed curb of the same mix design as for street paving. When a curb and gutter are placed separate of the street it shall conform to the standard curb and gutter requirements. The integrally placed curb shall be a minimum of six (6) inches wide and the curb face shall be a minimum of 6 inches.

C. Joints in Portland cement paving, curbs, and gutters shall be placed in accordance with Broken Arrow Standard Construction Specifications.

D. Fly Ash shall not be substituted for any quantity of cement, where the concrete will be used to construct public streets or sidewalks.

3) Asphaltic Concrete Streets:

A. The asphaltic base course for asphaltic concrete shall be of plant mixed, hot mix/hot laid asphalt containing four (4) percent to six (6) percent asphalt cement.

B. The surface course for asphaltic concrete shall be of plant mixed, hot mix/hot laid asphalt containing five (5) percent to seven (7) percent asphalt cement.

C. The mineral aggregates used in the asphaltic concrete mixture shall be approved by the City in accordance with the Broken Arrow Standard Construction Specifications.

D. Asphaltic concrete streets shall have a Portland cement concrete curb and gutter, except in RE zoned subdivisions, and shall be designed in accordance with section 7.2.c. of this ordinance.

7.3 STORM WATER DRAINAGE ASSOCIATED WITH STREETS

a. General:

1) All storm water runoff shall be subject to review and approval by the City with regard to analysis, design and construction of drainage facilities. The appropriate public authority shall have the right to maintain or to cause to be maintained the drainage system for its intended purposes. If a storm water master drainage plan is adopted for the area under consideration, then the provisions of the plan shall be adhered to.

2) The drainage system both public and private, may consist of storm sewers (which are closed conduits); improved channels constructed in conformity with adopted City Standards; unimproved drainage ways left in their natural condition; the areas covered by drainage way easements for the purpose of providing overland flow; and all appurtenances to the above including inlets, manholes, junction boxes, headwalls, dissipators, culverts, etc. All portions of the drainage system that exist on dedicated street rights-of-way or property owned by the City in fee shall be owned and maintained by the City, unless provided otherwise by agreement or covenant. Improved and natural channels shall be maintained by the property owners.

3) The drainage system plans shall show both plan and profile views of the proposed improvements. Any manhole or access point to the system that is buried out of sight shall be dimensioned to permanent objects in the vicinity.

4) The storm water drainage system shall be designed to receive and pass the runoff from a 100 year frequency rainstorm under full urbanization. In areas covered by the Tulsa Urban Study (Tulsa District, USACE), that study shall govern unless the design engineer determines that changes have been made that will result in more runoff than documented in that study. For areas not covered by the Tulsa Urban Study, the design engineer shall prepare and submit a study for the area. Full urbanization is defined as the total development in an area that is anticipated. The entire flow shall be confined within the said storm water drainage system.

b. Design Criteria for Collection System:

1) The storm water collection system shall be designed either

A. To pass a minimum of the runoff from a 5-year frequency rainstorm in a pipe network with overland flow capacities so that the combination of any two will pass the runoff from a 100-year frequency rainstorm under fully urbanized conditions;

B. Or, to pass the entire runoff from a 100-year frequency rainstorm in the pipe network. Should the entire runoff from a 100-year

frequency rainstorm be conveyed in a pipe network, grading shall be designed to convey the runoff from a 5 year frequency rainstorm and shall be designed to carry flow in the event of inlet blockage or by-pass.

2) The overland flow portion of the collector system shall be confined to dedicated rights-of way, or drainage easements to assure the storm water can pass through the development without inundating the lowest level of any building, dwelling, or structure. Drainage easements shall be shown on the plat.

3) The rational method of runoff analysis may be used for the design of the closed pipe networks of the storm sewer system up to drainage areas of 200 acres. For drainage areas over 200 acres, a hydrograph method shall be used.

4) The Rainfall Intensity Curves prepared for TP-40 and National Weather Service HYDRO-35 (June, 1977) shall be used for design in determining the rainfall.

5) The Oklahoma Department of Highways Technical Manual dated April, 1970 shall be used for determining the basic "C" values. A weighted "c" value shall be determined with minimum values of 0.45 for residential (RE, R1, R2, R3), 0.65 for multifamily (R4, R5, R6) and 0.90 for industrial and commercial areas. Unplatted areas within 300 feet either side of an arterial shall be either considered commercial or shall be in accordance with the comprehensive plan in estimating runoff coefficients. The weighted "C" valve shall be increased by 25% for the 100-year frequency rainstorm but shall not exceed 1.0.

6) The distance between inlets, as well as the distance to the first inlet, shall be determined by the following, whichever is less:

A. For the 5-year frequency rainstorm, two (2) driving lanes must remain open for streets on grade. (20') The depth of flow in the open lane shall not exceed six (6) inches.

B. For the 100-year frequency rainstorm one (1) driving lane (12') must remain open for streets on grade. Further, the depth of flow shall not exceed curb depth.

C. A maximum time of concentration of ten (10) minutes to the first inlet shall be used for single or multifamily residential areas.

D. A maximum time of concentration of five (5) minutes to the first inlet shall be used for commercial and industrial areas.

E. 600 feet.

7) At sump locations, the water depth shall not exceed 12 inches above the top of the curb, or 18 inches above the top of the grate, whichever is less, for the 100-year frequency rainstorm. Where sump collection systems are used, an overflow

route shall be established in the event of complete blockage of the sump. The developer may size the inlets and pipe at the sump location for the 100-year frequency storm and provide a sod overflow or maintain standard inlet and pipe sizing and provide a concrete overflow.

A. When a sod overflow structure is constructed, it shall be lined with bermuda grass and shall contain energy dissipators, if required, at the outflow point.

B. When a concrete overflow structures is constructed, it shall be constructed of six (6) inch thick Portland Cement concrete meeting the same requirements as concrete for sidewalks and shall contain energy dissipators, if required, at the outflow point.

c. Runoff from areas greater than one half (1/2) acre outside the roadway shall be collected before it reaches the roadway. Parking lots shall have internal drainage systems so as to reduce concentrated flow into streets. These requirements shall not apply to residential lots used as single family residences.

d. Where required by depth of flow, inlets shall be located at intersections to collect the flow to keep it from crossing the intersection. Inlets at intersections shall be located so they do not encroach upon the return.

e. Drainage areas, runoff from 5-year and 100-year frequency rainstorms, time of concentration, and inlet design for each inlet shall be summarized and tabulated on the plans. This summary table shall also be a part of the drainage calculations. The flows and velocities for each pipe and open channel shall be summarized and tabulated as above.

f. Open Ditch Requirements:

1) Trapezoidal channels shall be designed with a hard lined low flow channel, such as concrete. The low flow channel shall branch off to pick up any storm sewers discharging into the channel. The top of the sides of the low flow channel shall be a minimum of six (6) inches lower than the adjacent main channel bottom, to ensure that the drainage runs over and into the low flow channel and does not erode around it. The minimum cross slope on the bottom of the trapezoidal channel shall be 2%. The easement for the trapezoidal channel shall include a ten (10) foot width on the top of the bank for an access road.

2) Borrow ditches, when allowed, shall not exceed four (4) feet in depth. Culverts shall be sized to handle the borrow ditch flow. Borrow ditches shall be designed to carry the runoff from the 10-year frequency rainstorm. The side slopes on the bank next to the road shall be three (3) feet horizontal to one (1) foot vertical. The side slope on the opposite bank shall be whatever is necessary.

3) Roughness coefficients for drainage design will be as listed in tables 5-5 and 5-6, figure 5-5, pages 109 through 123, of "Open Channel Hydraulics" by Ven Te Chow, published by McGraw-Hill Book Company, 1959.

4) The minimum velocity in any drainage system shall be 2.5 fps, for all events of 5-year frequency and greater. The maximum velocity in a pipe shall be 30 fps and the maximum velocity in an unlined ditch shall be 6 fps.

g. Drainage Structure Requirements:

1) Storm sewers may be constructed of reinforced concrete pipe (RCP), coated steel pipe, or double wall polyethylene corrugated pipe, depending on the soil and loading conditions. Minimum pipe size shall be 15 inch diameter.

2) All storm drains that discharge into a stream shall have a concrete headwall, wingwalls, apron, and if required to prevent erosion, energy dissipators. Design shall be in accordance with City of Broken Arrow Standard Construction Specifications.

3) When the outfall velocity of a pipe or the velocity in a drainage ditch exceeds six (6) FPS, erosion control measures will be taken at the outfall of the pipe or in the area where the velocity will exceed six (6) FPS.

4) When RCP is specified it shall be furnished with omni-flex joints or equivalent. When RCP is specified in a non cohesive soil, such as sugar sand, and the storm drain is within 15 feet of a structure that would sustain damage from sinkholes, the City may require wrapping of joints with a non-woven geotextile fabric such as SUPAC.

5) Where RCP storm sewers cross streets, they shall be backfilled with either ODOT Type "A" aggregate base or flowable fill. Where metal or polyethylene storm sewers cross streets, they shall be backfilled with flowable fill.

6) Culverts shall be sized using either Kutters or Mannings charts, and the Federal Highway Administration's inlet control charts, for the design flow. The slope used for design shall be the slope of the invert of the culvert.

7) No pipe shall be installed downstream having a diameter smaller then the pipe from which it is receiving water.

8) Concrete pipe under streets shall not be less than C-76 Class III. For back and side yard installations Class II may be used. Corrugated metal pipes shall meet Oklahoma State Highway Department gauge requirements for fill heights, and bituminous coated and lined. Polyethylene corrugated pipe shall meet the requirements of AASHTO M294.

9) Junctions between different pipe sizes shall be made with the top inside of the downstream pipe no higher than the top inside of the upstream pipe.

10) A manhole or junction box shall be required at all changes of grade, changes in alignment, and junctions between two (2) or more different size pipes.

11) The horizontal distance between pipes being placed in the same trench shall be a minimum of 2T + 6". This would include multiple pipe crossings for culvert purposes.

12) Radius pipes will be used only on storm sewers having a diameter of 36 inches and larger. The radius of the curve shall be no less than five (5) times the diameter of the pipe. The degree of deflection shall be no greater than 7 1/2□ per joint of radius pipe, or the pipe manufacturer's recommendation, whichever is less. The City is allowed to require radius pipe, should the energy loss be excessive and thereby detrimental to the system.

13) A minimum of six (6) inches cover shall be provided over pipes and box culverts to the bottom of the subgrade except when the box culverts are built with the top at grade.

14) All storm sewers shall be shown in profile, showing flowline, size, type and grade. Profiles shall show the natural and proposed ground line at the center line of the storm sewer. Stationing shall be continuous through manholes, along the main (longest) line, to the top of the system. Branch lines shall be stationed, starting from 0 + 00, from their connection with the main line. Lines shall be stationed on the profile drawing from left to right increasing upstream.

15) The radius of curve for a box structure shall be a minimum of three (3) times the maximum width of the box structure, but not less than 50 feet.

16) New box culverts and bridges shall have adequate capacity to pass 100-year fully urbanized flows with one (1) foot of free board under the low chord. A backwater analysis shall be provided to illustrate compliance with this requirement.

17) Pipes discharging at a steep gradient into drainageways and detention facilities shall be provided with a headwall and energy dissipators. A steep gradient is defined as an energy grade line whose outlet velocity is six (6) feet per second or greater.

18) The centerline radius of a curve on an improved open channel shall be a minimum of three (3) times the top width at the design flow or 100 feet, whichever is greater.

19) All improved channels shall be provided with a minimum of one (1) foot of freeboard above normal depth of flow from a 100-year frequency rainstorm.

20) At all bends in improved channels, the amount of freeboard shall be increased by the following equation:

$$H = \frac{V^2 b}{64.4 r}$$

Where: H is Height of freeboard in feet.
V is the average Velocity in feet per second.
b is the width of the channel at the design water surface in feet.
r is the Radius of curvature of the channel centerline in feet.

21) The increased freeboard height shall be maintained a minimum of one (1) channel width upstream and downstream of the bend.

22) Culverts in barrow ditches shall be sized to pass 10-year frequency storm. Sizing shall be based on the engineer's analysis of requirements.

h. Storm Sewer Requirements:

1) When storm sewers are constructed in fill areas, all materials in fill areas shall be compacted to a 95% standard proctor density prior to the laying of the pipe.

2) Maximum spacing between manholes or junction boxes shall not exceed 400 feet for pipes of fifteen (15) inches in diameter and shall not exceed 500 feet for pipe sizes over 15 inches in diameter.

3) All junction boxes and manholes shall be built with the Standard Manhole Ring and Cover at grade.

4) A manhole or junction box shall be constructed at the P.C. or P.T. of all curves in sewers.

7.4 SPECIAL REQUIREMENTS FOR STREETS:

a. General: When a development will have a significant impact on the traffic pattern of the adjacent arterials(s), the City shall require the developer to provide additional width to the arterial(s) or other improvements to mitigate the impact. The City Engineer shall determine the exact type and quantity of construction necessary to mitigate each development. The following sections define the most common forms of mitigation and when they are used. These paragraphs are provided as a guideline only. Each development must be evaluated based on the traffic into and out of the development, the traffic load on the arterial, current configuration of the arterial, and final configuration of the arterial, as shown in the City's Major Street and Highway Plan.

b. Constructing Final Configuration Outside Lane:

1) Definition: This mitigation requires the developer to construct the outside lane of an arterial.

2) Basis for Requirement: This type of mitigation shall be required when:

A. The development is a non-residential development within 1,000 feet of an arterial type intersection.

B. The arterial(s) will be at or above 130 percent of level C capacity with the addition of the traffic from the development.

3) Special Considerations:

A. When a traffic signal must be moved, the City will contract for movement of the signal and the developer shall pay fifty (50) percent of the final contract cost.

B. When the addition of an outside lane will leave an unpaved area between the new lane and the old pavement, the developer shall design the intervening lane(s) and the City shall either:

(1) Pay for the lane(s) to be constructed by the developers contractor, if the cost is less than $7,500.00; or
(2) Contract for construction of the lane(s).

c. Constructing a Deceleration Lane:

1) Definition: A deceleration lane is a right turn lane into a development that has a lane width of not less than thirteen (13) feet for a distance of not less than 100 feet, measured from the center line of the road on which the right turn is to be executed, and a ten (10) to one (1) taper back to the existing arterial street width.

2) Basis for Requirement: This type of mitigation will be required when:

A. The street where the right turn is to be made is more than 1,100 feet from the arterial intersection; and

B. The arterial will be at or above 130 percent of level C capacity with the addition of traffic from the development; or

C. Topography makes the deceleration lane necessary for safety.

3) Special Considerations.

A. Deceleration lanes shall not be added to arterials that have been developed to final configuration, as shown in the City's Major Street and Highway Plan, unless the development generates excessive traffic or the nature of the traffic requires such a lane.

B. When a deceleration lane is constructed it will be rebuilt, at City expense, each time the arterial is widened until the arterial reaches final configuration.

d. Constructing an Access Radius with Taper:

1) Definition: An access radius with taper is a radius of at least fifty (50) feet with a five (5) foot wide section at the end of the radius tapered two (2) to one (1) back to the edge of the arterial.

2) Basis for Requirement: This type of mitigation will be required when:

A. There is a street/driveway out of the development turning right onto an arterial and the street is more than 1,000 feet from the arterial intersection.

B. The arterial will be at or above 130 percent of level C capacity with the addition of traffic from the development.

3) Special Considerations:

A. An access radius with taper shall not be routinely added to arterials that have been developed to final configuration.

B. When an access radius with taper is constructed, it will be reconstructed, at City expense, each time the arterial is widened until final configuration of the arterial is reached.

e. Constructing A Left Turn Bay:

1) Definition: A left turn bay shall be, at minimum, fifteen (15) feet wide, 80 feet long, and have a ten (10) to one (1) taper back to current arterial width.

2) Basis for Requirement: This type of mitigation will be required when the arterial is at 130 percent of level C capacity or higher and the development is of the type that will generate a large number of left turns in a fairly short period of time. Examples would be a factory with over fifty (50) employees or a school.

3) Special Considerations: The left turn bay will be reconstructed at City expense each time the arterial is widened until the arterial reaches final configuration.

f. Alternatives:

1) Alternatives to the types of mitigation established in this section shall be discussed with the City Engineer, for recommendation to the City Council.

2) Payment: When it is in the best interests of the City as determined by the City Council's option, the City may accept funds in lieu of the actual construction of the mitigation required in this section. This would normally occur when the City is in the process of designing an improvement to the arterial that would render the mitigation no longer required. The amount to be paid shall be an engineers estimate approved by the City Council.

7.5 SUBMITTALS FOR STREETS AND DRAINAGE SYSTEMS:

The following items are required for approval of street and drainage plans:

a. Soil Test Results
b Geotechnical Engineers Report
c. Pavement Design Report
d. Hydrology and Hydraulics Report (Drainage)
e. Storm Sewer and Drainage Plans including as a minimum, tabulation sheet, plan sheets, profile sheets, and standard details.
f. Street Plans including as a minimum, plan sheets, profile sheets, cross sections, and standard details.

7.6 STORM DRAINAGE NOT ASSOCIATED WITH STREETS

a. GENERAL: Every subdivision shall be provided with a storm water sewer or drainage system adequate to serve the area being platted, and otherwise meeting the approval of the officials having jurisdiction. Such storm water drainage system shall be so designed by the owner's engineer so that property owners located downstream from and upstream from the subdivision shall not be injuriously affected by the construction, operation, or maintenance of such system. Specific design criteria is found in Article 7.3.

b. CHANNEL IMPROVEMENTS: When the owner determines it is necessary to adjust the natural shape or length of a drainage channel affecting the flood plain, he/she shall make application to the City Manager. Any channel improvement must be approved by the City Manager, the City Engineer, and the Flood Plain Review Board before a permit for construction will be issued. This includes adding fill in an existing flood plain. All work in the drainage system and/or flood plains must be completed before the development will be accepted.

c. Design Criteria for Storm Water Storage:

1) General:

A. The detention storage requirements shall accommodate the excess runoff from a 100-year frequency storm. The excess runoff is that runoff generated due to urbanization which is greater than the runoff historically generated under existing conditions, for a given frequency storm.

B. Peak release rates from developments shall not exceed the existing runoff that occurred before development for all storm frequencies up to and including the 100-year frequency storm. As a minimum, the 10-year and 100-year storms shall be investigated.

C. Generally, urbanization results in more impervious area, alteration of times of concentration, and alteration of drainage patterns. If improvements are made to any natural channel downstream from an area requiring a 48" pipe to discharge a 10-year frequency storm compensatory storage must be provided to limit drainage of the 100-year storm to natural discharge.

2) For the design of storm water facilities, the following methods are approved:

Method	Drainage Area
HEC-1 Snyder's Method	Greater than 10 acres
HEC-1 SCS Method	2 to 200 acres
Modified Rational Approach with volume factors	Less than 16 acres
Graphed Method	Not over 2 acres

3) U.S. Weather Bureau Technical paper No. 40 and National Weather Service HYDRO-35 (June, 1977) shall be used for rainfall information.

4) The time increment used in developing the rainfall distribution and in reading off the ordinates of the unit hydrograph may be rounded off to the nearest whole time interval or to the nearest time increment.

5) The rainfall patterns shall be used in accordance with the modeling technique selected.

6) For Snyder's synthetic unit hydrograph method, the loss rates in determining the runoff/hydrograph shall be an initial loss of 0.5 inches and a uniform loss of 0.08 inches per hour for the subsequent hours once the initial losses are satisfied.

7) All calculations for detention facilities shall be submitted for review by the City. The submittal shall include hydrographs for both existing and developed conditions, detention facility stage-area-volume relationships, outlet structure details, and a stage versus time analysis through the facility.

8) Floodplain areas and detention facility locations shall be identified at the preliminary plat stage to illustrate how these areas will be managed during and after construction.

9) If a tract of land under development has a floodplain area within its boundary, the information that must be furnished either with the preliminary plat or before the final plat is submitted and shall include both a backwater analysis on the existing drainage system, and backwater analysis on the proposed drainage system.

10) Detention facilities shall be located in areas approved by the City. Each facility shall incorporate methods to minimize erosion and other maintenance reducing designs.

11) Additional detention storage, in excess of the required storage for a specific drainage area, can be provided to satisfy the detention requirements for a tract of land downstream of the detention facility, providing the detention facility with additional capacity is constructed prior to the development of the downstream tract.

12) All detention facilities shall be designed "dry" unless a special written maintenance agreement, has been approved by the City.

13) A minimum number of detention facilities is encouraged for each development. Regional detention facilities are encouraged for phased or cooperative development in a drainage basin.

14) If runoff has a natural tendency to drain in several directions for a given development tract of land where detention is required, then detention storage shall be provided for the bigger drainage area. Additionally, detention storage may be provided, at the same facility, to satisfy detention requirements for a separate drainage area on the same development, provided that:

A. The whole developmental tract of land is in the same watershed.

B. The smaller drainage area(s) that, has/have been compensated for does/do not, either singularly or in combination, adversely impact the health, welfare and safety of the general public downstream.

15) If a tract of land being developed is located in more than one watershed, grading work to divert flows from one watershed to another will not be permitted and compensatory storage will not be permitted in one watershed for that required in another.

16) Detention Facility Criteria:

A. All dikes and spillways on detention facilities shall have typical cross sections shown on the plans.

B. Side slopes on detention facilities shall not be steeper than 3:1 (Horizontal.:Vertical).

C. Detention facilities shall be provided with a low flow channel from the inlet to the outlet structure to transmit low flows and the low flow channel shall be approved by the City.

D. The detention area shall be identified as a separate platted area; as appropriate, it may consist of one or more platted lots, a separate block, or it may be identified as a reserve area.

E. Provision for the detention facility shall appear among the plat's restrictive covenants, or applicable law.

F. In the event the detention facility, as a result of drainage improvements, becomes unnecessary, the facility by action of the City Council may be vacated as provided for in the covenants or applicable law.

G. An access way at least twenty (20) feet wide shall be provided to any detention area. Access may be provided by frontage on a dedicated public street or by an access easement from a dedicated public street to the detention area. The access road shall have a maximum grade of 10 percent (10%).

H. If the detention facility is approved by the City to serve areas outside the subdivision in which it is located, such additional areas shall be specifically identified in the provision for detention.

I. The maintenance responsibility for on site detention facilities shall remain with the private sector and appropriate covenants shall be obtained to secure such maintenance.

J. Any dam or berm constructed shall be designed by a Registered Professional Engineer.

K. All detention dams or dikes shall be constructed as earth filled and non-overflow type dams. Embankment slopes shall not be steeper than 3:1. Spillways shall be constructed to pass the 100-year flood event. The structure shall contain the 500-year flood event with a minimum of one (1) foot of freeboard on the earth dam structure.

L. All earth slopes and areas subject to erosion, such as, adjacent to trickle channels, inlet structures, and outlet structures, shall be slab sodded with bermuda sod or protected with other erosion control measures. All other earth surfaces, with the area designated for detention facility site, shall have an established growth of bermuda grass. All grass covered areas shall be fertilized, watered and in an established growing condition prior to completion and approval of the detention facility.

d. ADDITIONAL REQUIREMENTS:

1) Drainage Structures: All cross street drainage structures will be designed in accordance with ODOT standard designs.

2) Overflow Structures: Overflow structures shall be paved from the back of curb to the low flow line of the channel, in accordance with City of Broken Arrow Standard Construction Specifications.

3) Trickle Channels: Trickle channels shall be constructed of portland cement concrete not less than six (6) inches thick.

4) Concrete Lining: Concrete lining of drainage channels shall include the entire channel and one (1) foot above the high water elevation. When the lining is designed to be constructed with separate sides and bottom, the design shall include the requirement for the bottom to be placed last and it shall cover a minimum of four (4) inches of the sides.

5) Energy dissipators shall be added to all outfalls where velocities will cause erosion of the natural channel.

6) All drainage pipes in non-cohesive soils shall have either joint bands or omni-flex or approved equal seals. Where the storm drain is within 15 feet of a structure, the City may require wrapping of joints with a non-woven geotextile fabric such as SUPAC.

7) Side slopes for grass lined channels shall be 3 to 1 or flatter. Side slopes for concrete lined channels shall be 1 to 1 or flatter for concrete placed against an existing slope or vertical or flatter where the side wall is formed.

8) All drainage facilities shall have perennial vegetative cover established that will check erosion.

7.7 WATER SUPPLY

a. PUBLIC WATER SUPPLY: A public water supply is defined as an entity permitted by the State Department of Environmental Quality to provide potable water to facilities other than the facilities owned by that entity.

b. ACCESSIBLE PUBLIC WATER SUPPLY: Where a public water supply approved by the City is reasonably accessible, each lot within the subdivision shall be provided with a connection thereto.

c. NONACCESSIBLE PUBLIC WATER SUPPLY: In a proposed subdivision, pending accessibility of a public water supply, the subdivider may be required to construct wells on each lot, or construct a private water supply system or attach to a rural water district in such a manner that an adequate supply of potable water will be available to every lot in the subdivision at the time improvements are erected thereon. The water supply plans shall be subject to approval by the Oklahoma Department of Environmental Quality (DEQ) and by the City. The water supply system shall be subject to inspection by the City during construction.

d. MINIMUM DESIGN CRITERIA FOR ALL PUBLIC AND PRIVATE WATER SUPPLY SYSTEMS

1) All water distribution lines shall meet the minimum criteria set forth in Oklahoma State Department of Health Engineering Bulletin #0589, dated February 7, 1985, titled Standards for Public Water Supply Facilities, or the State Department of Environmental Quality regulation that supersedes this bulletin.

2) Line Sizing:

A. All water distribution lines shall be sized utilizing a hydraulic analysis based on flow demand and pressure requirements. The system shall be designed to maintain a minimum pressure of twenty-five (25) pounds per square inch at ground level at all points in the distribution system under all flow conditions.

B. Minimum Sizing:

(1) Water mains constructed on section lines shall be not less than twelve (12) inches in diameter.

(2) Water mains constructed on half section lines shall be not less than eight (8) inches in diameter.

(3) Water mains in residential areas shall not be less than six (6) inches in diameter.

(4) Water mains in commercial, office, and industrial may be eight (8) inches in diameter if cross connecting lines are less than 600 feet apart. Otherwise the minimum line size shall not be less than ten (10) inches in diameter.

(5) Four (4) inch lines may be used in cul-de-sacs for distances not over 300 feet.

(6) Minimum permanent line size is four (4) inches in diameter.

3) Looped Systems:

A. All water lines used for service shall be looped to provide circulation.

B. A main line that terminates at a location which will be extended in the future, shall have a fire hydrant at the end of the line. This fire hydrant may be moved to a more appropriate location when the line is extended.

C. All lines in cul-de-sacs shall be looped with at least four (4) inch lines.

D. Lines used exclusively for fire hydrants may be, but are not required to be, looped.

4) Fire Hydrants:

A. Hydrants shall not be installed on lines under six (6) inches in diameter.

B. A valve shall be installed between the main and the hydrant.

C. Hydrants shall be connected to the main with pipe no less than six (6) inches in diameter, and shall be located on the property line between two (2) lots and one (1) foot behind the right of way line in a utility easement five (5) foot deep and five (5) foot wide in each lot for a total width of ten (10) feet.

D. Residential area spacing shall not exceed 600 feet.

E. Commercial and Industrial area spacing shall not exceed 300 feet.

5) Valves:

A. Air Relief/Vacuum Relief/Blow-off Valves: These types of valves shall be installed on all lines 12 inches and larger as required by the design. These types of valves shall be used on smaller lines only with the prior approval of the City Engineer.

B. Water Valves:

(1) Valves shall be located at not less than one mile intervals on 24 inch or larger lines, not less than one-half mile intervals on lines of 12 to 24 inches inclusive, and not less than one-fourth mile intervals on 8 to 12 inch lines.

(2) Valves shall be located at street intersections in readily accessible positions.

(3) All distribution branching from larger mains shall be valved.

(4) Valves shall be arranged so that each block can be isolated in case of a line break.

(5) Valve location shall be marked on curbs.

6) Protection of Iron Pipe, Fittings, and Valves: All buried iron pipe, fittings, and valves shall be polywrapped.

7) Service Crossings:

A. All service crossings shall be installed by the developer and shall be placed on lot lines.

B. Single house services will be 3/4 inch copper.

C. Two (2) house services will be one (1) inch copper.

D. Taps in RE zoned subdivisions will be one (1) inch copper for each house.

8) Blocking: All tees, bends, plugs, and hydrants shall be provided with reaction blocking, tie rods, or joints designed to prevent movement.

9) Pipe in Conduit: All pipe in conduit shall be provided with restrained joints.

e. MATERIALS: As specified in the City of Broken Arrow Standard Construction Specifications shall be used for water distribution lines.

f. DISINFECTION: All new mains shall be disinfected in accordance with AWWA C651. Safe bacteriological samples shall be obtained in two (2) consecutive days before that portion of the line or system may be used.

g. ACCEPTANCE: The City may accept for maintenance any water lines connected to its water system constructed within or outside of the City, after the prescribed tests and inspections.

h. SUBMITTALS:

1) City Submittals: The following items are required for City approval.

A. Hydraulic analysis report for the Development. (Note: The City will provide the Engineer with the required base information from the City's model or the Engineer may contract with INCOG for this analysis using the City's model.)

B. Water distribution plans including as a minimum, plan sheets, profile sheets, and standard details.

2) DEQ Submittals: The following items are required for DEQ approval:

A. Three (3) sets of City approved plans.

B. Engineers Report for DEQ.

C. Request for DEQ construction permit.

D. Check to DEQ for review and permit costs.

i. EXCESS LINE CAPACITY: The City, by reimbursing the owner for the increase in cost by payback contract or otherwise, may require lines larger than required by this article.

7.8 SANITARY SEWER SYSTEM

a. PUBLIC SANITARY SEWER SYSTEM ACCESSIBLE: Where a public sanitary sewer is reasonably accessible, each lot within the subdivided area shall be provided with a connection thereto. All connections shall be subject to the approval of the City Engineer in accordance with the regulations of the Oklahoma State Department of Environmental Quality.

b. CONNECTION TO PUBLIC SEWERS: Where a public sanitary sewer system is not reasonably accessible but where plans for the installation of sanitary sewers in the vicinity of the subdivision have been prepared and approved by the DEQ, the owner shall install sewers in conformity with such plans. Where immediate connection is not possible and until such connection with the sewer system in the basin can be made, the use of private sewage treatment facilities may be permitted, provided such disposal facilities are installed and maintained in accordance with the regulations and requirements of the City and the DEQ.

c. PUBLIC SEWER UNAVAILABLE: Where no sewers are accessible and no plans for a sewer system have been prepared and approved, the owner of unplatted land shall either plan and install a sewer collection and disposal system in accordance with the requirements of the preceding subparagraph "7.8b", or an individual disposal device may be installed for the single residence on the unplatted land; provided that no individual disposal device shall be permitted unless the lot to be so served has a minimum width of 100 feet and a lot area of not less than 22,500 square feet. The DEQ, with the concurring approval of the City Council, may modify these lot area requirements in relation to soil conditions and other pertinent facts and findings on any particular tract. Each such individual device and system shall be constructed and maintained in accordance with the regulations and requirements of the City, County Health Department and the Oklahoma State DEQ.

d. REQUIRED CAPACITY:

1) The City will require all developers constructing sewerage systems within the City Limits to construct the system with adequate capacity, as determined by the City, to serve the entire drainage area upstream form the point of consideration. The capacity shall include sewer lines, lift stations and force mains, where applicable. The minimum size of the sewer lines and lift stations shall be in accordance with the following tabulation:

Drainage Area	Sewer Line Size	Pump Station Capacity
Less than 154 acres	8"	*
155 to 238 acres	10"	0.76 MGD
239 to 540 acres	12"	1.08 MGD

541 to 807 acres	15"	1.62 MGD
808 to 1,174 acres	18"	2.35 MGD
1,175 to 1,617 acres	21"	3.24 MGD
1,618 to 2,065 acres	24"	4.13 MGD
2,066 to 2,828 acres	27"	5.65 MGD
2,829 to 3,745 acres	30"	7.49 MGD
3,746 to 6,090 acres	36"	12.18 MGD
6,091 to 9,189 acres	42"	18.38 MGD
9,190 to 13,118 acres	48"	26.24 MGD
13,119 to 17,962 acres	54"	35.92 MGD
17,963 to 23,790 acres	60"	47.58 MGD
23,791 to 30,675 acres	66"	61.35 MGD

* Capacity determined by actual area served and approved by the City.

2) No public sewer line shall be less than eight (8) inches in diameter. This requirement does not apply to "house sewers" defined as lines from a single house or a single connection to a lateral sewer.

3) The City will require any sewers so situated as to subsequently serve an entire drainage area to be constructed with a capacity and at such depths as to permit future extensions thereto throughout the entire natural contributing drainage area without subsequently exceeding the capacity available.

e. CONNECTION REQUIREMENTS: All sewers being developed as part of the subdivision of land shall be connected to public sewers within the drainage area in which the development is located, and the subdivider shall provide public sewer easements for all off-site constructions which may be necessary to accomplish this connection.

f. MINIMUM DESIGN CRITERIA:

1) All sanitary sewer systems shall meet the minimum criteria set forth in Oklahoma State Department of Health Engineering Bulletin #0587, dated April 2, 1987, titled Standards for Water Pollution Control Facilities or the Department of Environmental Quality regulation that supersedes this bulletin.

2) To the maximum extent possible sanitary sewer lines will be located in the backyard and side yard easements. Sanitary sewers may not be placed in front yard easements without prior approval by the City.

3) Manholes shall be cast in place or precast and shall be located not more than 300 feet apart.

4) Manhole rings and covers in streets shall be of the sealing bolt down type.

5) Protection of Iron Pipe, Fittings, and Valves: All buried sanitary sewers containing iron pipe, fittings, and valves shall be polywrapped.

6) Sanitary Sewers in Flood Plains:

A. When sanitary sewers are located in creek channels or below the ground water table, PVC pipe will be used to the maximum extent possible.

B. Manhole rings and covers in flood plains shall be of the sealing bolt down type.

C. Manhole Markers: Manhole markers shall be installed in unimproved flood plains on trunk sewers. The marker shall consist of a three (3) inch diameter galvanized steel post with cover cap at least seven (7) feet long. The post shall be set with a minimum two (2) feet of the post in concrete and at minimum five (5) feet exposed above finished ground elevation. The post shall be set 15 feet from the center of the manhole on the side opposite from the nearest drainage feature. To the maximum extent possible, the marking post shall be set in a true north/south or east/west direction from the manhole.

7) Sanitary Sewer Taps: All lateral sewers will be designed with taps installed during construction of the lateral. The tap shall be installed by placing a tee sized for the lateral with a four (4) inch opening in the line and stubbing the four (4) inch line to within four (4) feet of the finished ground surface. The four (4) inch line shall be constructed of Schedule 40 PVC and shall have a glued joint cap affixed to the upper end. A metal coupon shall be buried with the cap to allow location with a metal detector. Plastic marking tape shall be tied to the four (4) inch line and left exposed on the surface. The tee shall be located at the first joint at least five (5) feet upstream from the downstream property line. The exact location shall be noted on the as-built plans as a distance in feet from the nearest manhole. This shall be in accordance with the City of Broken Arrow Standard Drawing for sanitary sewer taps. In special cases and with the prior approval of the Chief Building Inspector the building contractor may install a second tap on the lot and not use the installed tap.

8) Backflow Preventers: When the designed finished floor elevation of a structure is less than one (1) foot above the top of ring elevation of the upstream manhole, a backflow preventer must be installed on the structure. This requirement must be shown on the sanitary sewer plans, in a table that identifies each lot that requires a backflow preventer.

g. Lift stations must include the following:

1) Three (3) pumps and motors
2) Running time meter
3) 6' chain link fence with 8' gate
4) Electrical pole, meter and equipment located inside fence
5) Easement for station and access road
6) All weather access road and turn-around
7) Flood Light
8) Fail safe provisions - one of below:

A. 24 hour storage
B. 4 hour storage with telephone alarm
C. Standby gasoline driven pump or generator

h. SUBMITTALS:

1) City Submittals: Sanitary sewer system plans including as a minimum, plan sheets, profile sheets, backflow preventer table, and standard details.

2) DEQ Submittals: Three (3) sets of City approved plans, an Engineers Report for DEQ, request for DEQ construction permits, and payment to DEQ for review and permit costs are required.

i. Excess Line Capacity: The City, by reimbursing the owner for the difference in cost, may require larger diameter lines than required by this article.

7.9 EROSION CONTROL

a. GENERAL: During development of a subdivision the owner will ensure that proper erosion control measures are taken. Erosion control measures shall ensure that run off from the construction site is free of excessive silt and does not impact downstream drainage structures.

b. DESIGN CRITERIA:

1) The Oklahoma Department of Transportation standards for erosion control shall serve as the minimum standard for erosion control plans. Each owner or his engineer shall establish the erosion control plan for the subdivision being developed.

2) For construction on sites that are over five (5) acres, an NPDES permit is required.

c. SUBMITTAL REQUIREMENTS:

1) Initial erosion control measures will be submitted with the grading plan at the time the earth change permit is requested.

2) The final erosion control plan shall be submitted with the street and drainage plans.

7.10 MISCELLANEOUS REQUIREMENTS:

a. DRIVEWAYS: Driveways in the public right of way shall be constructed of Portland cement concrete which meets the requirements for streets or as specified by the City Engineer. Driveways shall not be less than six (6) inches in thickness and shall have a turn radius of not less than five (5) feet. The driveway shall start at the elevation of the gutter of the street. Removal of existing curb for driveway shall be by saw cut method. Use of mountable curbs to start driveways is prohibited.

b. BUILDING PADS: Fill areas for buildings and structures shall be compacted as subgrade in lifts with a maximum thickness of eight (8) inches.

c. UTILITY ADJUSTMENT: All utilities that are designed to be at ground level shall be adjusted to the appropriate level when the grades are altered during construction.

d. LANDSCAPE: All landscaped strips, parkways and screening areas dedicated to the public shall be graded, seeded and planted in an appropriate manner by the owner.

e. STREET SIGNS: The owner shall submit a list of street signs required and pay the fee for those signs at the time of final platting. Upon completion of the paving the street signs shall be procured and installed by the Public Works Department.

f. FENCES:

~~1) Residential developments that back up to an arterial, collector, or highway shall be screened with a solid opaque fence/screen that is a minimum of six (6) feet high.~~

2) Multi-family development, mobile home parks, and industrial developments which adjoin an arterial, collector, or highway shall be screened with a solid opaque fence/screen that is a minimum of six (6) feet high.

3) Commercial and office development fencing requirements shall be imposed at the time of the site plan review.

4) Fences will not be permitted in storm water drainage easements, established flood plains, sight triangles, or ingress and egress locations; Provided that the City Council may approve fences in flood plains which are so designed that no impediment to the flow will occur.

g. HIGH PRESSURE PIPELINE MARKERS: When a lot is located within 500 feet of a high pressure pipeline, which transports combustible materials, a marker will be placed in the curb in front of the lot. The marker shall be cast from yellow brass and mounted in concrete as specified in the City of Broken Arrow Standard Construction Specifications.

h. LIGHTING:

1) General: Provisions shall be made by the developer for adequate lighting of public streets within the proposed subdivision.

2) Types of Lights: Lights shall conform to the standard types accepted for maintenance by Public Service Company of Oklahoma (PSO). Decorative lights must be approved by the City and PSO prior to installation.

3) . Design Requirements:

A. The owner shall have a system designed that meets the following illumination requirements.

ILLUMINATION: Requirements for Average Maintained Horizontal Illumination

Roadway and Walkway Classification	Commercial		Intermediate		Residential	
	Footcandle	Lux	Footcandle	Lux	Footcandle	Lux
Vehicular Roadways:						
Highway	0.6	6	0.6	6	0.6	6
Artery	2.0	22	1.4	15	1.0	11
Collector	1.2	13	0.9	10	0.6	6
Minor	0.9	10	0.6	6	0.4	4
Alleys	0.6	6	0.4	4	0.2	2
Pedestrian Walkways:						
Sidewalks	0.9	20	0.6	6	0.2	2
Pedestrian Ways	2.0	22	1.0	11	0.5	5

*Note: The recommended illumination values shown are meaningful only when designed in conjunction with other elements. The most critical elements as described in this practice, are as follows:

(1) Illumination Depreciation
(2) Quality
(3) Uniformity
(4) Laminar Mounting Heights
(5) Spacing
(6) Transverse Location of Luminaries
(7) Laminar Selection
(8) Traffic Conflict Areas
(9) Border Areas
(10) Transition Lighting
(11) Alleys
(12) Roadway Lighting Layouts

B. Spacing: Lights shall be placed at a maximum of 600 feet apart.

TABLE 7.1 - STREET MINIMUM DESIGN STANDARDS

ITEM	MINOR	HIGH DENSITY MINOR	RESIDENTIAL COLLECTOR	COMMERCIAL COLLECTOR	INDUSTRIAL COLLECTOR	SECONDARY ARTERIAL	PRIMARY ARTERIAL		
Pavement Design									
Assumed Tandem Axle Load in Kips	36	36	56	56	65	65	65		
Assumed Single Axle Load in Kips	20	20	30	30	40	40	40		
Assumed Average Daily Traffic (Note 1)	200	300-700	2000-6000	2000-6000	2000-6000	Note 2	Note 2	Minimum	Concrete
Pavement Thickness (inches)	6.0	6.0	7.0	7.0	7.0	8.0	8.0		
Minimum Asphalt Surface Thickness (inches)	1.5	1.5	2.0	2.0	2.0	2.0	2.0		
Minimum Asphalt Base Thickness (inches)	5.0	5.0	6.0	6.0	5.0	6.0	6.0		
Minimum Additional Base Thickness For Asphalt Street (inches of Type) (Note 3)	1.0	1.0	0.75	0.75	0.75	2.0	2.0		
Design Speed (Miles Per Hour)	30	30	35	35	35	Note 4	Note 4		
Right-of-Way Widths (Feet) (Note 5) (Note 9)	50	50	60	80	80	100	120		
Minimum Pavement Width (Feet) (Note 7)									
No Parking	26	26	36	42	42	Note 6	Note 6		
Parking One Side 26	26	36	42	42	N/A	N/A			
Parking Both Sides	36	36	36	42	42	N/A	N/A		
Grade and Geometric									
Maximum Grade (Note 8) 8.0%	8.0%	6.0%	6.0%	6.0%	4.0%	4.0%			
Minimum Grade (Note 8) 0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%			
Minimum Centerline Radius (Feet)	100	100	350	350	350	300-1412	300-1412		
Minimum Sight Stopping Distance (Feet)	175	175	250	250	250	250-350	250-350		
Minimum Traffic Lane Width (Feet)	12	12	12	12	12	12	12		
Minimum Parking Lane Width (Feet)	8	8	11	11	11	N/A	N/A		
Minimum Driveway Width (Feet)	10	10	10	10	10	10	10		
Maximum Driveway Width (Feet)	20	20	35	35	35	35	35		
Driveway Radius (Feet) 5	5	5-15	5-15	5-15	5-50	5-50			
Minimum Sidewalk Setback (Feet from Curb)	6	6	10	10	10	10	10		
Maximum Sidewalk Setback (Feet from Edge of Right-of-Way)	1	1	1	1	1	1	1	1	

NOTES:

1. Design must justify the loading used in the design analysis.
2. Actual traffic counts will be used for arterial design.
3. Base for asphalt streets shall consist of the minimum thickness of asphalt base with the remainder of the base being either asphalt base or rock of equivalent thickness
4. Design speed for arterials will be designated by the City Engineer.
5. Right-of-Way widths shown for arterials does not include intersection ROW. Intersection ROW requirements for arterials is 140 feet for 1,070 feet from the center line of the intersection
6. Arterial pavement width will be established by the City Engineer.
7. All pavement widths include an 18" gutter at the edge of both sides of the street.
8. Deviations from minimum and maximum grade must be approved by the City Engineer.
9. For roads with higher capacity requirements than primary arterials the right-of-way requirements will be established by the roadway design, but shall not be less than the requirement for a primary arterial. 7-23

ARTICLE 8. PLAN APPROVALS
(Amended by Ord. 1839 dated March 21, 1994)

8.1 GENERAL

Prior to any work being done on each utility in a subdivision the Developer must receive approval of the plans for the utility and issue a permit for the construction from the City. It is the developer's responsibility to ensure that plans are received by the City in sufficient time to allow plan approval and issuance of the permit before the proposed start of construction. Should the developer or his contractor start work on a subdivision prior to issuance of a permit for that work, the City will issue a stop work order. That order shall remain in effect until such time as the permit is issued.

8.2 CITY APPROVAL.

If the plans and specifications for the proposed improvements meet or exceed the applicable construction standards, the City Engineer shall show his approval by affixing his signature and the date of approval to the plans and specifications. One (1) set of the approved plans and specifications shall be returned to the engineer developer, or owner of the proposed subdivision within fifteen (15) working days.

8.3 CITY DENIAL.

If the plans and specifications for the proposed improvements do not meet the applicable design or construction standards, the City Engineer shall so notify the owner's Engineer in writing within fifteen (15) working days. This shall serve as notice that work on the proposed project, as scheduled, is suspended pending approval of revised plans and specifications.

8.4 STATE APPROVAL.

Water and sanitary sewer system plans require approval and a permit from the State Department of Environmental Quality before the proposed system can be tapped into the existing system. The developer may start work on water and/or sanitary sewer prior to receipt of the State permit. This will be allowed only upon receipt of a letter from the owner that clearly states that all work is at the owner's risk. Systems installed in this manner will not be tapped onto the existing City system until final State approval is received and any changes required by the State permit are made.

8.5 DOCUMENTS REQUIRED FOR PLAN APPROVAL AND PERMIT ISSUANCE.

a. EARTH CHANGE PERMIT: Three (3) copies of the site plan and grading plan for the area covered by the permit.

b. CITY REVIEW OF ALL STREETS AND UTILITIES: Three (3) copies of all plans, specifications, and required test reports as outlined in Article 7; One (1) copy will be stamped and returned upon approval.

c. BONDS: All requests for utilities construction permits must be accompanied by performance and maintenance bonds. The maintenance bond must be for a minimum period of one (1) year after acceptance of the utility.

d. STATE REVIEW OF WATER AND SANITARY SEWER SYSTEM:

1) Three (3) complete sets, of each item, of City approved plans and specifications.

2) Engineers report.

3) Request for permit.

4) Check for review and permit, made out to the "State Department of Environmental Quality".

8.6 PRE-CONSTRUCTION CONFERENCE.

A pre-construction conference shall be scheduled with the owner, the prime contractor, the owner's Engineer, and representatives of the City prior to commencement of construction. The owner shall provide the City with a list of all significant subcontractors and with a copy of all notices to proceed which are issued to the contractors. This meeting will be conducted in accordance with the applicable City Administrative Regulation.

8.7 REVIEW, PERMIT, AND PRE-CONSTRUCTION CONFERENCE TIME FRAMES.

a. SITE PREPARATION:

Responsible Agency	Action	Minimum Time Required (Working Days)
Owner	Submit site & grading plans	As Required
City Engineer	Review and approve	2
Owner	Revise & resubmit plans (if necessary)	As Required
City Engineer	Review revised plans and issue earth change permit	2
Public Works	Set up Pre-construction Conference	3

b. STREETS AND DRAINAGE:

Responsible Agency	Action	Minimum Time Required (Working Days)
Owner	Submit plans, specifications & test reports as required	As Required
City Engineer	Review and approve	15
Owner	Revise & resubmit plans (if necessary)	As Required
City Engineer	Review revised plans and issue construction permit	5
Public Works	Set up Pre-construction Conference	3

c. WATER AND SANITARY SEWER SYSTEMS:

Responsible Agency	Action	Minimum Time Required (Working Days)
Owner	Submit plans and specifications	As Required
City Engineer	Review and approve	15
Owner	Revise & resubmit plans (if necessary)	As Required
City Engineer	Review revised plans and issue construction permit	5
Owner	Submit to the City Engineer for DEQ review, plans, reports, and permit fees	As Required
City Engineer	Submit packet to DEQ for review	2
DEQ	Review and issue permit	30 (Minimum)
Owner	Submit proceed at owners risk letter	As Required
Public Works	Set up Pre-construction Conference	3

ARTICLE 9. ENGINEERING, SUPERVISION AND INSPECTIONS
(Amended by Ord. 1839 dated March 21, 1994)

9.1 DESIGNER.

All plans and specifications for public improvements shall be prepared by or under the direct supervision of a Registered Professional Engineer. The Engineer shall be registered in the State of Oklahoma and shall affix his seal to all plans and specifications.

9.2 REVIEW OF PLANS.

The City shall review all plans for public improvements to ensure that minimum design, materials and construction standards are met or exceeded. This review is for the City's purpose and in no way relieves the designer from the requirement to meet Federal, State and local standards.

9.3 INSPECTION.

a. GENERAL: The City shall have all construction of public improvements inspected by qualified inspectors. This inspection is to assure that the materials and workmanship meet the City's minimum specifications. The inspection of construction of public improvements by the City, does not relieve the owner and contractor from the responsibility to meet the City's minimum standards.

b. INSPECTION PROCEDURES: Inspections procedures shall be as detailed in City of Broken Arrow Administrative Regulations.

c. VIOLATIONS OF STANDARDS: Inspectors shall notify the contractor of violations of the construction standards in writing. If the contractor fails to correct such violation, or continues to violate the construction standards, the City Manager shall have the authority to stop work on the project by issuing an order in writing and setting forth the violation therein. Neither the contractor nor the developer, shall proceed with the work until 1) the failure or fault cited in the stop order has been corrected and 2) his is notified in writing by the City Manager to proceed.

9.4 RELEASE OF MAINTENANCE BOND.

Prior to the end of the period covered by the maintenance bond, the Public Works Department shall make an inspection of the project. The City Manager shall notify the contractor in writing of all defects that must be corrected and the corrections must be accepted by the City before the contractor may be released from his bond and the City

accepts the project for the purpose of future maintenance. Normal wear is not a defect for the purposes of this section.

9.5 DISOBEDIENCE OF ORDERS.

Failure to comply with any written order of the City Manager or an authorized representative issued under authority of this ordinance shall constitute a Class "A" offense.

ARTICLE 10. ACCEPTANCE OF PUBLIC IMPROVEMENTS
(Amended by Ord. 1839 dated March 21, 1994)

10.1 MEETS OR EXCEEDS STANDARDS.

Hereafter, no public improvements shall be accepted for maintenance or for any other purpose by the City of Broken Arrow, Oklahoma, until or unless they are constructed in accordance with these standards and have passed the tests set forth in the Standard Construction Specifications. The developer or his engineer shall provide as-built drawings within forty-five (45) days after acceptance of the utility. These drawings will be provided in two (2) hard copies and on electronic media compatible with the City CADD system, if the engineer has the capability to provide the electronic media copy. Failure to provide the required as-built drawings will result in suspension of building permits in the development.

10.2 MAINTENANCE BOND REQUIRED IN ADVANCE.

No new streets, storm sewers, or other public improvements shall be accepted by the City of Broken Arrow for purposes of ownership and maintenance until the contractor has furnished a good sufficient maintenance bond or other approved device in favor of the City of Broken Arrow, Oklahoma, as set forth hereafter. Provided that no maintenance bond shall be required for sidewalks.

10.3 ACCEPTANCE PROCEDURE.

The inspection and acceptance procedure for utilities is detailed in the City's Administrative Regulations which govern the acceptance process.

ARTICLE 11. SECURITY DEVICES AND FEES. (11 0.S. 45-104C)

11.1 BONDS, ESCROWS OR SECURITY DEVICES.

a. HOLD PERMITS FOR "AS BUILTS". The city shall escrow all building permits and applications on the subdivision until such times as the owner supplies "as built" plans upon completion of construction. "As built" plans shall be provided to the City Engineer within thirty (30) days of the improvements being completed.

b. CONSTRUCTION SECURITY DEVICES. Prior to the release of the conditional final plat of the subdivision, the owner shall provide a corporate surety bond, escrow arrangement, letter of credit or other equivalent security device acceptable to the City Manager in an amount equal to the costs of the construction of all improvements. Such security arrangement shall be subject to the condition that the improvements must be completed within one year, with an option granted to the city to extend the time of performance for one additional year after approval of the final plat. In the event all or any portion of the improvements are not completed, the city may proceed with the work and hold the owner and the company issuing security devices jointly and separately liable for the costs thereof, or pursue such other remedies as may be available. (11 0.S. 45-104C)

c. PERFORMANCE SECURITIES. A performance bond executed by a surety company based upon an estimate by the City Engineer of the costs of construction of the improvements shall be furnished by the subdivider to the city in an amount equal to the costs of construction of such improvements, and providing that the improvements will be completed within one year, with an option granted to the City to extend the time of performance for one additional year after approval of the final plat; provided further that as an alternative, the subdivider may escrow the costs of the improvement with the city, or provide other approved equivalent irrevocable security assurances to guarantee performance. Provided further that the City Manager or his designate may agree in writing with the owner to delay the construction of any sidewalk which is adjacent to a street which the city intends to widen, under which agreement the costs of construction must be escrowed with the city and the sidewalk must be constructed within one year of the completion of the street widening project for the effected portion of the street; if the widening project is unduly delayed, the city may require the subdivider to begin the sidewalk construction and may release the escrowed funds in payment of the construction costs. (11 0.S. 45-104C)

d. MAINTENANCE SECURITIES. The owner shall provide a maintenance bond or other approved security devices covering the maintenance of all streets, sidewalks, and storm sewers for a period of five (5) years from the date of the acceptance of these facilities, and shall provide a maintenance bond for a period of three (3) years from the date of acceptance for all other public facilities installed. Such bonds shall be absolute on their face, and not limited as to the cause of the damage or deterioration which must be

repaired. The amount of the maintenance bonds on streets, sidewalks, and storm sewers shall be equal to 100 percent to the total costs of construction; the value of the other maintenance bonds shall be equal to 50 per cent to the total costs of construction; bonds shall be issued by surety companies properly licensed to do business in Oklahoma, and are subject to the approval of the City Attorney. (11 0.S. 45-104C)

e. DELAYED MAINTENANCE SECURITY. In the event an owner completes a public improvement, but the subdivision does not develop sufficiently so the improvement is not being substantially utilized within three (3) years of the completion of the improvement. The owner shall be responsible for any reworking of the public improvements made necessary by the delay in the utilization of these improvements. The failure to perform such reworking operations shall be grounds for the immediate suspension of all construction in progress in the subdivision, and shall further be grounds for a moratorium on any future building permits issued in the subdivision until such time as reworking has taken place. For the purpose of this section, substantial utilization shall mean that either: 1) The improvement routinely and regularly receives use at the level of 40 percent of its designed capacity; or 2) that construction has been completed upon 40 percent of the lots within the plat of the subdivision, which structures are actually being utilized for their intended purpose by the owners thereof.

f. MAINTENANCE SECURITIES EXEMPTION. Provided that after December 31, 1986, no maintenance bond shall be required for sidewalks. (Amended by Ordinance 1432 dated December 15, 1986.)

11.2. FEES.

a. PLAT APPLICATION FEE. A written application upon a form provided by the city for a tentative approval of the subdivision shall be submitted to the City Planner's officer, together with a fee in the amount of $50.00.

b. CONDITIONAL FINAL PLAT FEE. After the submission of the copies of the conditional final plat, the owner shall pay the city a fee equivalent to $2.00 per lot, with a $50.00 minimum, and may file the plat with the County Clerk, using one or more stamped, signed copies in accordance with state law. Within five (5) days following the filing of the final plat with the Court House, the owner shall provide the city with seven (7) certified copies of the filed plat.

c. SEWER FLUSHING FEE. The Sewer Flushing Fee shall be paid prior to the test in accordance with the following schedule:

PIPE SIZE (inches)	FEE PER FOOT
8	$0.045
10	0.05
12	0.06
15	0.07
18	0.09
21, 24 & 30	0.10
36 and 42	0.12

d. INSPECTION FEE. The City Engineer or his designate, on behalf of the City of Broken Arrow, is hereby authorized to charge one hundred and fifty dollars ($150.00) per day for the inspection services provided by the city for the inspection of water and sanitary sewer lines, storm sewers and paving in the process of construction, when such inspection occurs on a week-end or holiday or more than two (2) years after the start of construction.

ARTICLE 12. PENALTIES

The violation of any of the provisions of this ordinance or any amendments thereto by the owner, the contractor, or any of their employees or persons under their control shall be a Class "B" offense unless otherwise specified. Each day upon which a violation occurs or continues is a separate offense, and each act which in fact violates two (2) or more provisions of this ordinance is a separate offense under each provision violated. (Art. 7, Ok. Const. 1; 11 0.S. 41-111; See also Broken Arrow Land Subdivision Code §9.5)

ARTICLE 13. SEVERABILITY

The various provisions of this ordinance are not interdependent. In the event that any provision of this ordinance shall be held to be invalid or unconstitutional, the remainder of the ordinance shall not be affected thereby and shall remain in full force and effect.

3.2bb FENCES ON ARTERIALS AND HIGHWAYS FOR RESIDENTIAL SUBDIVISIONS:

All residential subdivisions abutting any Federal or State Highways, a turnpike or any arterial streets of the City, shall construct a privacy fence not less than six (6) feet nor more than ten (10) feet in height and constructed of opaque material. All supports of the fence shall consist of either galvanized steel which is equal to or larger than two and three-eighths (2 ⅜) inch, or of masonry construction. Said fence shall be placed on the boundary between the right of way for the State or Federal Highway or the arterial, and the rear or side yards on the outer perimeter of the residential subdivision. The Director of Public Works may permit alternatives, following individual application and review.

SECTION II: Section 7.5 of the Broken Arrow Land Subdivision Code (Ordinance #1309) is hereby amended to read as follows:

7.5 SUBMITTALS FOR STREET AND DRAINAGE SYSTEMS:

a. Fencing Plans as to arterial streets and boundaries with the residential subdivision, including plan sheets and standard details.

7.10

f. FENCES:

1) All residential developments that back up to an arterial, collector, turnpike or Federal or State Highways shall be screened with a solid opaque fence/screen that is a minimum of six (6) feet and not more than ten (10) feet in height. The entire arterial fencing shall be uniform in height along that subdivision and/or the adjacent property. Replacement fencing/screening shall retain its original height and material and the top elevation shall match the adjoining elevation. All support posts shall be constructed of permanent building materials that may include but not be limited to a minimum of schedule 40 galvanized steel posts with an o.d. equal to or larger than two and three-eighths (2 3/8) inch or masonry materials, pvc fencing using dual extruded pvc posts, or other such permanent building materials as the building industry allows with the same or greater wind load as those materials listed above and as allowed by the Broken Arrow Building Code, as amended. Said fences shall be placed along the part of the property line of the rear or side yards of the residential subdivisions which face or back up to an arterial, collector,

turnpike, or Federal or State highway. The City Manager, or his designee may permit alternatives, following individual application and review.

WHERE DO YOU WANT THIS MOVED? I COULDN'T FIND A 7-29?

c. PAVEMENT DESIGN:

1) Pavements shall be designed in accordance with current AASHTO standards.

2) The minimum weighted structural number for pavements in Broken Arrow shall be as follows:

A. Minor and high density minor - 4.6

B. Residential, commercial, and industrial collectors - 5.1

C. Arterials - 6.0

§7.11 SUBDIVISION POLICIES AND GUIDELINES FOR PRIVATE STREET, GATED RESIDENTIAL DEVELOPMENTS

a. GENERAL REQUIREMENTS: PRIVATE STREETS, STORM SEWERS, AND RECREATIONS AREAS

1) Private streets shall be allowed only within Planned Unit Developments. Private streets shall be constructed and maintained with the same standards established in the City of Broken Arrow Land Subdivision Code for public streets, and shall include curbs, pavements, storm water inlets and all street fixtures. Pavement widths, paving and structure design and the drainage system shall be in accordance to the Land Subdivision Code. Maintenance of private streets, by property owners association shall be established in the Deed of Dedication of the recorded plat.

2) Private street subdivisions shall not be permitted if adjacent subdivision or undeveloped land have or require access to and from these streets. Private streets shall not be permitted if access to an existing or future collector street is impeded or rendered impossible.

3) Private street subdivisions shall have sidewalks in accordance to the Land Subdivision Code. Pedestrian (sidewalk) entrances shall be identified in the PUD proposal.

4) Private street subdivisions with 20 or more dwelling units shall have more than one ingress and egress.

5) Private street subdivisions may not have interior school bus services. School bus locations shall be shown in detail on paving plans, and require approval by the applicable public school district.

6) All private street lighting costs shall be paid by property owners association. All private streetlights shall be installed in accordance to the Land Subdivision Code, however the system shall be maintained privately.

7) All private street signs shall be maintained privately in accordance to the Land Subdivision Code and shall be of red (or other approved) color background.

8) Storm sewer systems in gated residential subdivisions shall be built in accordance to the Land Subdivision Codes and shall be maintained privately by the property owners association.

9) Parks, trails and recreation areas within gated developments shall be privately owned and maintained by the property owners association.

b. PRIVATE STREET ENTRANCE REQUIREMENTS

1) All private street entrances shall be on arterial or collector streets only.

2) All private street entrances (at the gate) shall have entrance and exit lanes, with lanes being at least 13 feet wide.

3) All private street exits on arterial streets shall have two lanes for outbound traffic and one lane for inbound traffic.

4) All pedestrian access shall be provided near the main entrance and be part of the site plan.

5) If private street entrances have a structure (or cover) over the driving lane, the vertical clearance shall be at least 14 feet.

6) Private streets intersecting with any public street shall have a turn around before the gate entrance that provides thirty eight feet (38') minimum from the entrance face of curb on the control panel island to the face of curb on the outside of the exit lane. The turn around shall provide space between control panel island and gate or gate island for at least a 'P' design vehicle (full size passenger vehicle) to make the turn around in one fluid motion.

7) Access to all emergency and service delivery vehicles shall be guaranteed at all entrances by the property owners association. These vehicles include, but are not limited to, the following agencies: Police, Fire, Ambulance, Public Works, refuse pickup, mail delivery, municipal and county inspections (code) departments, other municipal and government agencies, utility companies (electric, gas, telephone, cable TV, water, sewer),

etc. The Developer and the homeowners association shall provide insurance indemnification for any loss to any government vehicles.

8) All current security codes, pass words/numbers and devices necessary to allow instant access shall be provided to the City of Broken Arrow and utility service agencies.

c) GUIDELINES FOR OPERATIONAL GATES ON PRIVATE STREETS

1) Gates or any control device shall be allowed only on private streets and private streets shall only be permitted in a PUD subdivision.

2) Maintenance of the gate shall be the responsibility of the property owners association and shall be established in the Deed of Dedication of the recorded plat.

3) Maintenance contracts, to service and repair the gates, by a private contractor or a property owners association, shall require periodic inspections by private companies. These contracts and maintenance records shall be available to the City of Broken Arrow upon request.

4) The PUD shall specify that the property owners association shall provide an access code number and phone number of the gates to the City of Broken Arrow. Names and contacts of maintenance companies, groups or individuals involved in contracts shall be provided to the City on an annual basis.

5) Gates shall provide a minimum of 14 feet wide space, or opening.

6) Gates shall have sound (siren) activated and/or telephone activated controls. Where gates are activated by telephones, all phone numbers shall be provided to the City of Broken Arrow through the Police Department.

7) Gate design and systems shall be approved by the City of Broken Arrow prior to installation.

8) All security locks or devices used to secure any gate apparatus shall be approved by the City of Broken Arrow. Hard-tempered steel locks shall not be permitted.

9) Entrance lights, gate lights and keypad lighting shall be approved through the site plan review.